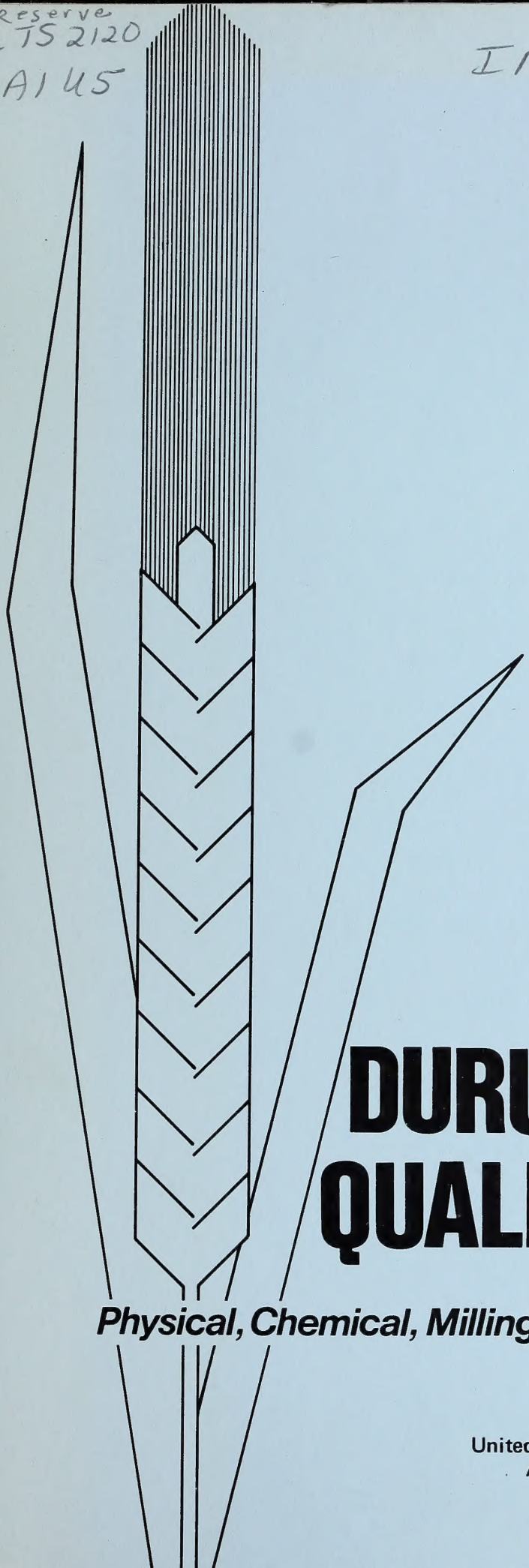
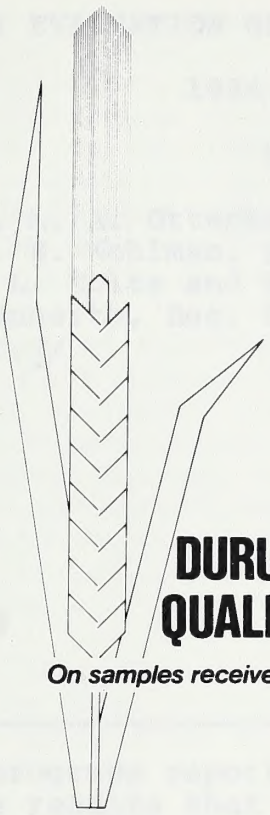


1984 CROP

DURUM WHEAT QUALITY REPORT

Physical, Chemical, Milling, and Spaghetti Characteristics

United States Department of Agriculture
Agricultural Research Service
North Central Region



DURUM WHEAT QUALITY REPORT

On samples received from the 1984 crop

Source:

Spring and Durum Wheat Quality Laboratory
USDA, Agricultural Research Service
Harris Hall, N.D.S.U.
Fargo, North Dakota 58105

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATIONS

QUALITY EVALUATION OF DURUM WHEAT VARIETIES

1984 CROP1/

by

R. D. Crawford, A. A. Ottenbacher, M. A. Dregseth, Technicians, J. E. Wohlman, Secretary, Agricultural Research Service; 2/ L. L. Nolte and M. Skunberg, Technicians, NDSU; 3/ Wallace H. Kunerth, Res. Chemist and V. L. Youngs, Research Leader.2/

1/ This is a progress report of cooperative investigations containing some results that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and to those persons having direct and special interest in the development of agricultural research programs.

This report was compiled by the Agricultural Research Service, U. S. Department of Agriculture. Special acknowledgment is made to the North Dakota State University for their facilities and services provided in support of these studies. The report is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved. Cooperators submitting samples for analysis have been given analytical data on their samples prior to release of this report.

2/ Hard Red Spring & Durum Wheat Quality Lab., NDSU.

3/ Dept. of Cereal Science & Food Technology, NDSU.

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INTRODUCTION

The twenty-first Durum Wheat Quality Report contains data for the 1984 crop. Samples of standard varieties and new strains of durum wheat grown in cooperative experiments in the durum wheat regions of the United States4/ were milled and evaluated by the Hard Red Spring and Durum Wheat Quality Laboratory in cooperation with the Department of Cereal Chemistry and Technology on the campus of North Dakota State University at Fargo, ND. Methods and techniques are described in detail in the text of the report.

All samples received that were large enough to mill on the Buhler experimental mill were processed into spaghetti using the macro spaghetti processing method as described on page 12. A five pound wheat sample is required for the above method. All other samples were milled using the micro procedure and were not processed into spaghetti. Those samples having acceptable kernel characteristics and dust color score, if possible, should be included for macro processing the following year.

The purpose of this report is to make available to cooperators the quality data on standard varieties and new selections of durum wheat from the 1984 crop.

4/ Cantrell, R.G. and Brosz, J. Wheat varieties grown in cooperative plot and nursery experiments in the spring wheat region in 1984. Department of Agronomy, North Dakota State University, Fargo, ND.

SOURCE OF THE 1984 CROP SAMPLES

Tests were performed on six hundred three samples from 20 stations and eight states (South Dakota, North Dakota, Montana, Washington, Idaho, Arizona and California) for quality evaluation. However, data on 40 of these samples are not included in this report, because this information was of interest to plant breeders at specific experiment stations only. Data presented in this report are from the Field Plot Nursery, Uniform Regional Nursery, Western Durum Nursery and the Preliminary Nursery.

UNIFORM REGIONAL NURSERY - 210

Selby and Day County - South Dakota
Sidney, Conrad and Bozeman - Montana
Williston and Carrington Irr. - North Dakota

WESTERN DURUM NURSERY - 51

Royal Slope - Washington
Aberdeen - Idaho

FIELD PLOTS - 133

Pinal County, Maricopa County and Mesa - Arizona
Kings County, Delta and El Centro - California

PRELIMINARY NURSERY - 169

Tulelake - California

1984 UNIFORM REGIONAL DURUM NURSERY

LIST OF ENTRIES

Entry No.	Entry	Sel. or P.I. No.	Year Entered	Origin
1	Mindum	5296	1929	Minnesota
2	Rolette	D6517	1968	ND-USDA
3	Ward	D6674	1969	ND-USDA
4	Crosby	D6715	1970	ND-USDA
5	Rugby	D6722	1970	ND-USDA
6	Cando	D7057*	1972	ND-USDA
7	Coulter	DT411	1974	AC, Winnipeg
8	Vic	D74112	1976	ND-USDA
9	Lloyd	D771*	1978	ND-USDA
10	Medora	DT433	1980	AC, Winnipeg
11	72114/Ed	D7733	1981	North Dakota
12	71110/Ed	D7798	1981	North Dakota
13	7224/Crosby	D77200*	1981	North Dakota
14	7456/Vic	D793	1981	North Dakota
15	Wsc/Hc	DT371	1982	Univ. of Sask.
16	7224/Cd	D78127*	1982	North Dakota
17	74111/Cd	D78177*	1982	North Dakota
18	77204/7618	D804*	1982	North Dakota
19	7224/Vic	D79168*	1983	North Dakota
20	Ed/Wkm	D79120	1983	North Dakota
21	Ed/Wkm	D79122	1983	North Dakota
22	DT427/Vic	D79103	1983	North Dakota
23	74111/Cd	D79209*	1983	North Dakota
24	764/73121	D79104	1983	North Dakota
25	7463/74110	D7983	1983	North Dakota
26	7456/Vic	D7925	1983	North Dakota
27	7507/Vic	D7958	1983	North Dakota
28	SC6962/SC6965-494-1	DT375	1983	AC, Swift Current

* Semidwarf

WESTERN REGIONAL DURUM

LIST OF ENTRIES

Durox	T8300138
Grandur	T8300140
Irridur	T8300143
Lloyd	T8300146
McKay	T8300147
Modoc	T8300175
Owens	T8300179
Pondera	T8300217
Waid	TL073468
Yavaros 75	TL073471
Yavaros 79	UC560
D79168	WPB-2-10-E
D79209	WPB-803
HD810466	WPB-804
T8300136	WPB-881-4

METHODS

The methods used in the testing of the samples were essentially the same as given in the last report.

Briefly, the following methods and terminologies were applied:

Test Weight Per Bushel - The weight per Winchester bushel of dockage-free wheat.

Thousand Kernel Weight - The 1000 kernel weight was determined by counting the number of kernels in a 10 g sample of cleaned, picked wheat on a Seedburo seed counter5/.

Kernel Size - The percentage of the size of the kernels [large, medium, and small] was determined on a wheat sizer as described by Shuey6/.

The sieves of the sizer were clothed as follows:

Top Sieve - Tyler # 7 with 2.92 mm opening
Middle Sieve - Tyler # 9 with 2.24 mm opening
Bottom Sieve - Tyler #12 with 1.65 mm opening

Protein Content - The protein (14% m.b.) was calculated by multiplying the percent nitrogen, as determined by the standard Kjeldahl procedure, by the factor of 5.7.

Milling - The samples were cleaned by passing the wheat over an Emerson kicker and dockage tester and through a modified Forster scourer Model 6. The clean, dry wheat was tempered in three stages: first to 12.5% moisture at least 72 hours prior to the second stage which is to add an additional 2.0% for 18 hours to give a cumulative moisture of 14.5%, then a final temper of 3.0%, 45 minutes prior to milling.

5/ Mention of a trademark name or proprietary product does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture, and does not imply its approval to the exclusion of other products that may also be suitable.

6/ Shuey, William C. A wheat sizing technique for predicting flour milling yield. Cereal Sci. Today 5: 71 (1960).

The field plot and large advanced and special yield nursery samples were milled on a Buhler experimental mill specially designed for milling durum wheat. The mill is equipped with corrugated rolls throughout and the semolina purified on a Miag laboratory purifier. All of the stock is handled pneumatically. The mill flow is shown on page 9. The purified semolina is used in testing the quality of semolina. The semolina extraction was calculated on a total products basis. Prior to milling this year's samples, the Buhler mill and purifiers were adjusted to maximize semolina yield, yet keep the speck count to an acceptable level. Hence, semolina yields reported here are probably higher than those reported in the 1983 Report because of increased milling efficiency.

The small samples were milled according to the method of Vasiljevic et al 7/. The flow diagram of this system is shown on page 10. Extraction is determined on a clean, dry basis.

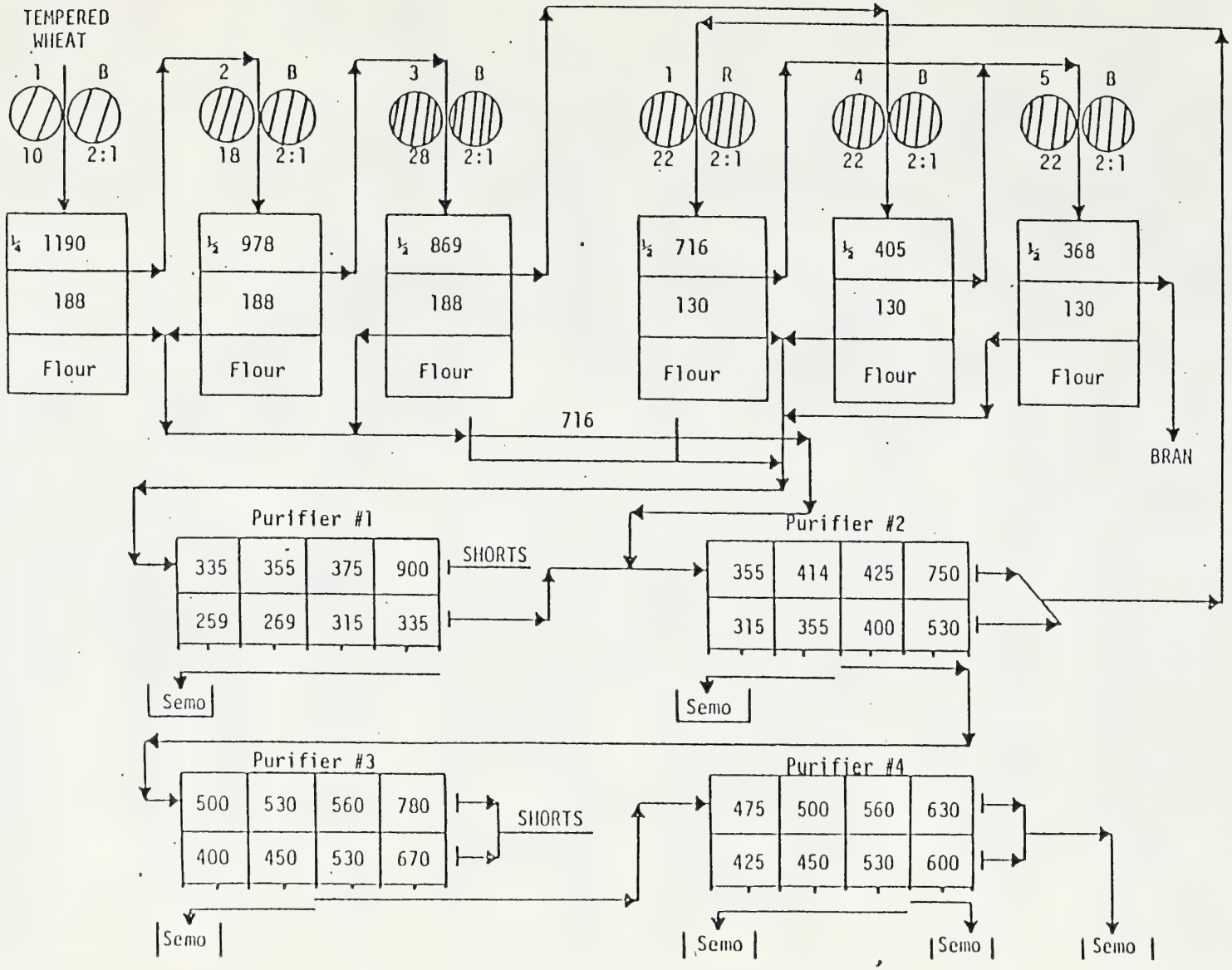
Semolina Extraction - For the macro procedure the percent semolina is calculated on a total products basis. For the micro procedure the extraction is calculated on cleaned wheat to mill.

Speck Count - The number of specks in three different one-inch square areas of semolina enclosed by a special glass and frame were counted. Any materials other than pure endosperm chunks, such as bran particles, etc. were considered specks. The average of three readings was converted to the number of specks per 10 sq in (speck count). Speck count is done only on the macro milled samples.

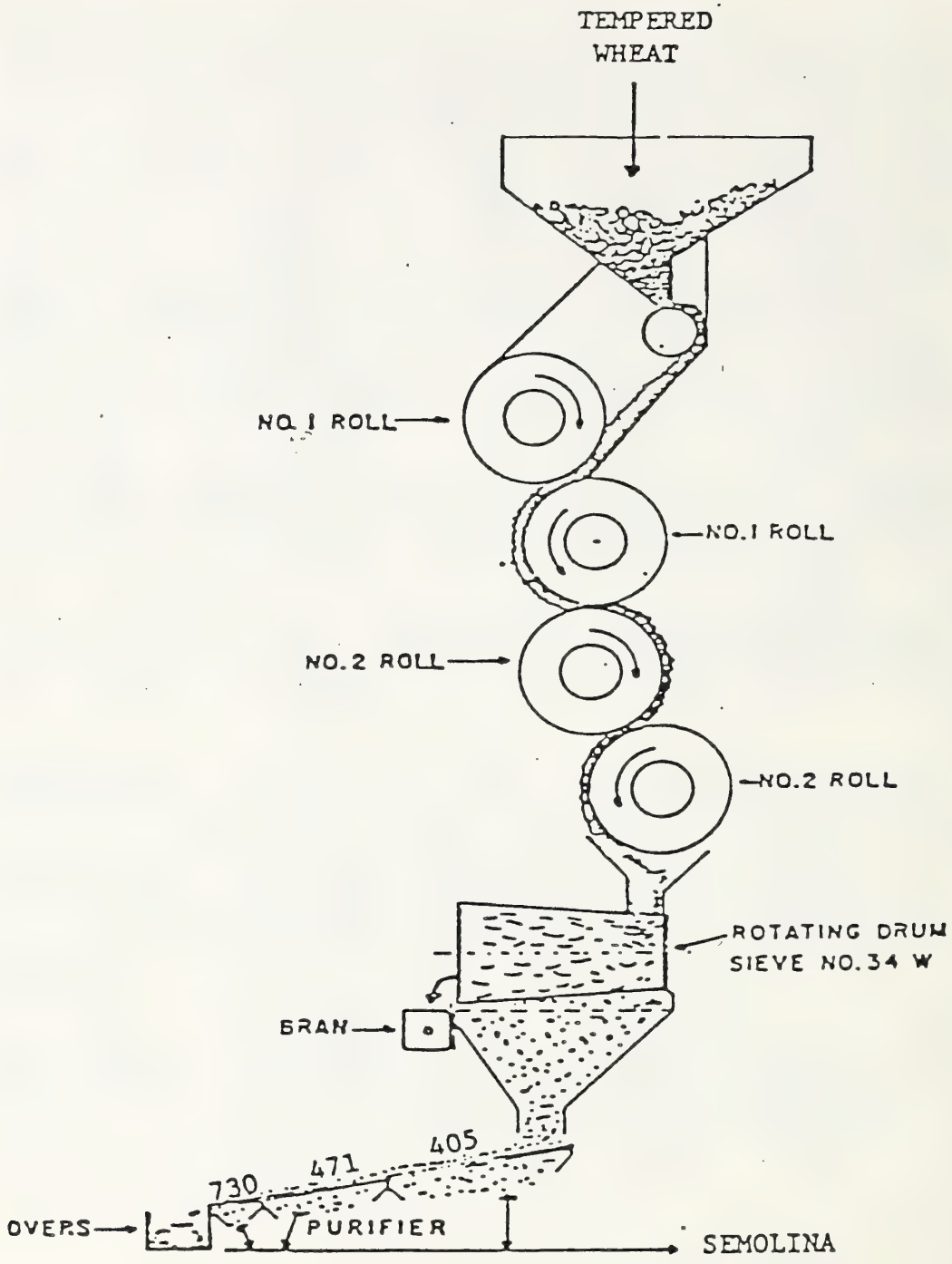
Color Score - The color of the spaghetti or semolina has been generally accepted as the most important single grading factor. A deep amber or golden color is the most preferable. The amount of yellow pigmentation determines the color.

7/ Vasiljevic, S., Banasik, O.J. and Shuey, W.C. A micro unit for producing durum semolina. Cereal Chem. 54: 397 (1977).

FLOW DIAGRAM FOR LARGE DURUM WHEAT SAMPLES
MACRO PROCEDURE



FLOW DIAGRAM FOR SMALL DURUM WHEAT SAMPLES
MICRO PROCEDURE



Samples which have a color rating 1.5 point below the standard spaghetti score or 15 points below the standard semolina color score are unsatisfactory. It is possible that the average color score for a crop year may be higher or lower than average; therefore, this would be taken into consideration when giving the overall rating of a variety over a number of years.

The grading system shown below has been adopted for scoring the semolina color and spaghetti relative to the standard color score.

COLOR SCORE

Semolina	Spaghetti	Description
15 above	1.5 above	Much deeper and intense yellow pigmentation than standard
10 above	1.0 above	Deeper and more intense yellow pigmentation than standard
5 above	0.5 above	Slightly deeper and more intense yellow pigmentation than standard
Equal to Standard	Equal to Standard	Standard quality, depth and intensity of yellow pigmentation
5 below	0.5 below	Slightly less depth and intensity, but sufficient quantity of pigmentation
10 below	1.0 below	Slightly less quantity as well as depth and intensity of pigmentation than the standard, but still sufficient to be rated satisfactory on the basis of color
15 below	1.5 below	Sufficiently less quantity of yellow pigmentation than the standard to give a pale yellow color and graded unsatisfactory for color score.

Semolina Color Score - The semolina color score was determined by using Model D25M-9 Hunterlab tristimulus colorimeter equipped with an optical sensor and a signal processor. The instrument was calibrated using a yellow standard tile with Hunter L, a, b values of L = 77.33, a = -1.91, b = 20.94. A sample of semolina was placed in a cell normally used for near infrared analysis of flour in a Technicon 400 Infra Analyzer. This cell fits in the opening of the optical sensor. The b value was converted to a yellow color score ranging from 1-14, with 14 being a deep yellow and the most desirable color. In this report, the semolina color score, reported as "Du" in the tables, is multiplied by a factor of 10.

Spaghetti Color - The spaghetti color scores also were measured in the Model D25M-9 colorimeter. The specimen area (2 in diameter) was covered with straight spaghetti strands and readings were taken against a black background with 0% reflectance. Color difference values (L%, a% and b%) were measured for all the spaghetti samples by the method of Walsh, Gilles and Shuey[8/]. A uniform chromaticity chart was used for determining spaghetti color scores.

MACRO Spaghetti Processing - Spaghetti was processed on a semi-commercial scale pasta extruder (DEMACO). The control as well as all samples was processed with the following extruding conditions.

Temperature	49.5°C
Rate	12 rpm
Absorption	32%
Vacuum	18 in Hg

These were the optimum conditions for processing spaghetti.

8/ Walsh, D. E., Gilles, K. A. and Shuey, W. C. Color determination of spaghetti by the tristimulus method. Cereal Chem. 46: 7 (1969).

To process the spaghetti, a 1000 g batch was premixed by slowly adding the water and mixing at a slow speed for approximately 30 seconds and high speed for 10 seconds. Then the remainder of the water was added at slow speed in a Hobart C-100-T mixer equipped with a pastry knife agitator. After all of the water had been added, the semolina and water were blended at high speed for 30 seconds; the mixer was stopped to scrape down the sides of the bowl, and the blending continued for 90 seconds more to complete the premix stage. The premixed pasta was then transferred to the vacuum mixer of the press and extruded through an 84-strand 0.043 in teflon spaghetti die. A jacketed extension tube (9¼" long x 1-3/4" inside diameter) was attached to the semi-commercial pasta extruder to allow more time for hydration of the semolina and minimize the number of white specks (unhydrated semolina) in the spaghetti. Extrusion temperature was controlled by a circulating water bath.

Spaghetti Drying - Spaghetti was dried in an experimental pasta dryer for an 18 hour cycle as described by Gilles, Sibbitt and Shuey9/. During the drying period, the humidity of the dryer was decreased linearly from 95 to 60% R.H. and the temperature was held constant at 100°F.

9/ Gilles, K. A., Sibbitt, L. D. and Shuey, W. C. Automatic laboratory dryer for macaroni products. Cereal Sci. Today 11: 322 (1966).

Cooking Characteristics of Spaghetti

A. Cooking Procedure

Spaghetti (10 g) which had been broken into lengths of approximately 5 cm, was placed into 300 ml of boiling water in a 500 ml beaker. After 12 minutes cooking, the samples were washed thoroughly with distilled water in a Buchner funnel, allowed to drain for 2 minutes and then weighed to determine cooked weight. This procedure is the same as last year, but differs from previous years, when a 1% salt solution was used and the spaghetti was cooked for 10 minutes.

B. Firmness Score

Two strands of cooked spaghetti were placed on a plexiglass plate and sheared at a 90° angle with a special plexiglass tooth. A continuous recording of distance versus force was made by the instrument during the operation. An automatic integrator was used to calculate the area under the curve (g cm) which was the amount of work required to shear the cooked spaghetti. To measure firmness, the average of three integrator scores was used, and the average work to shear was used as a measure of spaghetti firmness. The firmness score was read directly from the integrator value.

The higher the value, the firmer the spaghetti. A value of approximately 7.00 appears to be preferred.

Calculations were as follows:

$E = 0.0216 \times A$ (g cm)

A = Average integrator reading

E = Area of curve in g cm

C. Residue

This is the weight of the solids remaining after the combined cooking and washing water was evaporated.

DISCUSSION

The following discussion represents some of the basic techniques and criteria used in the milling and cooking quality evaluation of durum wheat samples. Several testing factors are used to determine the overall quality characteristics or final evaluation of a particular sample including, in general, the kernel characteristics, milling performance and cooking performance.

Each evaluation factor can be important. A sample could be of sufficiently poor quality for a given factor to eliminate it from possible future testing. However, a sample submitted for the first time and found to show little promise should be tested again to establish if it has some good promise, or no promise. A sample which is consistently rated as little promise or no promise should be discarded.

Data presented in this report were processed by using the Statistical Analysis System (SAS Institute, Inc., SAS Circle, Box 8000, Cary, NC 27511). The program developed from this system allows flexibility within the quality grading factors. This should allow us to relate more directly to industry and consumer requirements.10/

In this evaluation system 11 dependent variables are used. These are test weight, 1000 kernel weight, percent small kernels, wheat protein, total extraction, semolina extraction, dust color, speck count, semolina protein, spaghetti visual color score and spaghetti firmness score. Five additional variables are measured and included in the tables for the reader's use and information but are not used in the computerized evaluation of the samples. These are percent large kernels, mixograph score, semolina mineral, falling number and cooking residue.

After computing an average of each of the 11 variables for the standards from a station or nursery, the computer subtracts established values from each of the standard averages to determine major (MJ) and minor (MI) faulting limits. There are two exceptions where precise values have been assigned, which are independent of the station standards. The first exception is wheat protein, where percentages below 11.5% will be classified as MJ faults, and percentages between 11.5% - 12.5% will be MI faults (14% m.b.). The second exception is semolina protein, where percentages below 11.0% are classified as MJ faults, and percentages between 11.0 and 11.5% are classified as MI faults (14% m.b.). Hence, the wheat and semolina protein faulting values remain the same for all stations and nurseries.

10/ Nolte, L.L., Youngs, V.L., Crawford, R.D. and Kunerth, W.H. 1985. Computer program evaluation of hard red spring wheat. Cereal Foods World 30:227-229.

SELECTION OF STANDARDS

Whenever possible, the standards selected were named varieties grown at each location or in each nursery. In the tables of data, the varieties used as standards are identified by an "s" in the second column. At the bottom of each table are cited "average of standards". Quality deviation from these values determine the major and minor faults (note preceding paragraph). In nurseries where breeders did not grow named varieties, standard quality data were obtained from the 1983 North Dakota standard ('Vic'), which was processed separately with each nursery. This standard was grown in North Dakota, not at the particular nursery location. Other deviations are footnoted in the tables.

HOW SAMPLES ARE SCORED

Each sample is assigned an evaluation score of 4. Major and minor faults determined from the data by the computer will reduce this score, depending upon the quality factor being faulted. The effects of the different quality faults are shown in the table which follows:

DURUM PROGRAM FAULTING AND SCORING VALUES

Variable	Range[a]		Effect on Evaluation Score[b]	
	Minor fault	Major fault	Minor fault	Major fault
Test Wt. (lb/bu)	-2.2	-3.1	-	-1
1000 KWT (g)	-2.1	-5.1	-	-1
Small Kernels (%)	+5	+10	-	-1
Wheat Prot. (%)	12.5	11.5	-1	-2
Tot. Ext. (%)	-2.5	-3.5	-1	-2
Semo. Ext.(%)	-3.0	-4.0	-1	-2
Dust color	-10	-15	-2	-3
Specks/10 sq. in.	+10	+15	-	-1
Semo. Prot. (%)	11.5	11.0	-1	-2
Visual Spag. color	-1.0	-1.5	-2	-3
Firmness (g cm)	-1.5	-2.25	-1	-2

[a] Wheat and semolina protein percents are fixed lower limits for faults. All other values represent the deviation from the average of the standards required to warrant a minor or major fault.

[b] These values are subtracted from a beginning score of 4.

Because of the large number of samples received, and often because of the small sample size, we cannot perform all of the evaluation tests on each sample. The computer evaluation system allows any combination of quality factors to be evaluated.

The Final Evaluation (VAL) rating applies only to the data contained in the year of the report. The main defects and outstanding features are discussed. A selection which is promising as a new variety should be continued. A sample which shows little or no promise should be discontinued.

EXPERIMENTAL RESULTS - 1984 CROP

The results are tabulated and presented in the following order: Tables 1-7, Uniform Regional Nursery; Tables 8-9 , Western Durum Nursery; Tables 10-17, Field Plot Nursery; Tables 18-24, Preliminary Nursery.

UNIFORM REGIONAL NURSERY

Analyses were done on the individual samples from each station. Samples were milled using the micro procedure. Semolina produced from the micro milled samples were not processed into spaghetti. A sample that has a good semolina dust color score will usually produce spaghetti with an acceptable spaghetti visual color score. The varieties of Rugby, Vic and Ward represent the standards used for all stations in the Uniform Regional Nursery.

Two hundred ten samples were received from seven stations and three states. Thirty samples were received from all 7 stations. Ten of these samples were named varieties. The remainder were experimental lines. The discussion which follows is based on averaged data from the 7 stations.

Quality data for Rugby, Vic and Ward were averaged for each station, and these data were used as standards to evaluate the other selections. Exceptions are wheat and semolina protein concentrations, which are fixed values. Hence, a variety or selection may be rated satisfactory at two different stations, but comparison of the data may show much poorer results for one station due to adverse environmental conditions. Thus, the sample with poor results could be rated as satisfactory at one or more stations. Each variety or selection is followed by the average general evaluation score, number of minor faults/number of major faults, the number of years tested and average general evaluation. This is followed by a short description of the 1984 characteristics.

Cando (3.2 - 26/13)(3 years) - Some promise.

Faults (1984 crop only)

Kernel Characteristics - Test weight, 1000 KWT, small kernels.

Milling Performance - Satisfactory.

Coulter (3.6 - 18/3)(3 years) - Good promise

Faults (1984 crop only)

Coulter (Cont'd)

Kernel Characteristics - Test weight, 1000 KWT.

Milling Performance - Satisfactory.

Crosby (3.4 - 16/6)(3 years) - Some promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT

Milling Performance - Dust color, semolina extraction.

Lloyd (3.5 - 17/7)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT, test weight, small kernels.

Milling Performance - Semolina extraction.

Medora (3.9 - 7/1)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Mindum (1.4 - 39/20)(3 years) - No promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT

Milling Performance - Dust Color

Rolette (3.7 - 6/1)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT.

Milling Performance - Satisfactory.

Rugby (3.9 - 7/0)(3 years) - Good promise

Faults (1984 crop only)

Rugby (Cont'd)

Kernel Characteristics - 1000 KWT.

Milling Performance - Semolina extraction.

Vic (4.0 - 2/0)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

Ward (3.9 - 4/0)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT.

Milling Performance - Semolina extraction.

C8814 (2.4 - 9/4)(1 year) - Little promise

Faults (1984 crop)

Kernel Characteristics - 1000 KWT, test weight.

Milling Performance - Dust color, semolina extraction.

D793 (Monroe)(3.7 - 8/1)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Small kernels.

Milling Performance - Semolina extraction.

D804 (3.9 - 12/1)(2 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT, test weight, small kernels.

Milling Performance - Satisfactory.

D7925 (3.7 - 3/2)(2 years) - Good promise

Faults (1984 crop only)

D7925 (Cont'd)

Kernel Characteristics - Test weight, 1000 KWT.

Milling Performance - Satisfactory.

D8012 (4.0 - 2/0)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - 1000 KWT.

Milling Performance - Satisfactory.

D8016 (3.9 - 3/1)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - 1000 KWT.

Milling Performance - Satisfactory.

D8019 (3.7 - 1/0)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - Satisfactory.

Milling Performance - Dust color.

D8034 (3.9 - 3/0)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - 1000 KWT.

Milling Performance - Semolina extraction.

D8082 (4.0 - 2/0)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - Test weight, 1000 KWT.

Milling Performance - Satisfactory.

D78177 (3.7 - 23/6)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

D79103 (3.8 - 2/1)(2 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Satisfactory.

Milling Performance - Satisfactory.

D79104 (3.9 - 11/2)(2 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT.

Milling Performance - Satisfactory.

D79168 (3.6 - 9/3)(2 years) - Some promise

Faults (1984 crop only)

Kernel Characteristics - 1000 KWT.

Milling Performance - Satisfactory.

D79209 (3.6 - 15/4)(2 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Test weight, 1000 KWT, small kernels.

Milling Performance - Semolina extraction.

D80152 (3.7 - 11/1)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - Test weight, 1000 KWT, small kernels.

Milling Performance - Semolina extraction.

D80162 (3.7 - 2/1)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - Test weight.

Milling Performance - Semolina extraction.

DT371 (3.6 - 19/6)(3 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Test weight.

Milling Performance - Satisfactory.

DT375 (3.7 - 9/2)(2 years) - Good promise

Faults (1984 crop only)

Kernel Characteristics - Test weight, 1000 KWT, small kernels.

Milling Performance - Semolina extraction.

H81466 (3.3 - 12/2)(1 year) - Some promise

Faults (1984 crop)

Kernel Characteristics - 1000 KWT, test weight, small kernels.

Milling Performance - Semolina extraction.

H81485 (3.9 - 1/0)(1 year) - Good promise

Faults (1984 crop)

Kernel Characteristics - Satisfactory.

Milling Performance - Semolina extraction.

WESTERN DURUM NURSERY

Fifty-one samples were received from two stations. All analyses were done the same as for the Uniform Regional Nursery using our micro procedure.

Royal Slope, Washington - Table 8

Twenty-four samples were received from this station using Lloyd and Modoc as the standards. Two selections showed good promise, seven showed some promise, eight showed little promise and seven selections showed no promise. The major faulting area is wheat protein. The average evaluation score for this station was 2.2.

Aberdeen, Idaho - Table 9

Twenty-seven samples were received from this station also using Lloyd and Modoc as the standards. Ten selections showed good promise, five showed some promise, three showed little promise and nine selections showed no promise. The two major areas for faults were 1000 KWT and dust color. The average evaluation score for this station was 2.6.

FIELD PLOT NURSERY

One hundred thirty-three samples were received from eight stations in three states. All samples were milled, and the semolina was processed into spaghetti using the macro method.

Pinal County, Arizona - Table 10

Six varieties were received from this station using Aldura and Mexicali as the standards. All varieties showed a no promise evaluation. Wheat and semolina protein were the two major faulting areas.

Maricopa County, Arizona - Table 11

Five varieties were received from this station. Aldura and Mexicali were also used as the standards. Westbred 881 showed good promise. Dust color was the major faulting area.

El Centro,, California - Table 12

Thirty-two samples were received from this station using Aldura, Mexicali and Westbred 881 as the standards. Five samples showed good promise, three showed some promise, five showed little promise and nineteen showed no promise. The average evaluation score was 1.8.

Mesa, Arizona - Table 13

Sixteen samples were received from this station. Aldura, Cando and Westbred 881 were used as the standards. The major faulting areas were wheat and semolina protein. Three samples showed good promise, two showed some promise, one showed little promise and ten showed no promise. The average evaluation score was 1.9.

Delta, California - Table 14

Thirty-one samples were received from this station. Aldura, Mexicali, Modoc and Westbred 881 were used as the standards. All samples had a no promise evaluation. The major faulting areas were 1000 KWT, wheat and semolina protein and dust color.

Kings County, California - Table 15

Thirty-one samples were also received from this station. Aldura, Mexicali, Modoc and Westbred 881 were used as the standards. All samples had a no promise evaluation. The major faulting areas were wheat and semolina protein, dust color and 1000 KWT.

Minot, North Dakota - Table 16

Six named varieties were received from this station using Vic as the standard. Two areas of faults were 1000 KWT and the firmness score. Vic showed good promise, Lloyd showed some promise, Cando and Crosby showed little promise and Ward showed no promise. The average evaluation score was 2.2.

Langdon, North Dakota - Table 17

Six named varieties were also received from this station using Vic as the standard. The major faulting area was 1000 KWT. Vic and Crosby showed good promise, Cando, Lloyd, Rugby and Ward all showed some promise. The average evaluation score was 3.3.

PRELIMINARY NURSERY

A total of 169 samples were received from one station. All samples were milled using our micro procedure.

Tulelake, California, Two Replica Sets - Table 18

A total of 16 samples were received in this series. Our 1983 standard was used as the standard. Wheat protein, semolina extraction and dust color were the major faulting areas.

Tulelake, California, #130 Konzar - Table 19

Forty-nine samples were received in this set. Produra and Yavaros were used as the standards. Wheat protein and semolina extraction were the major faulting areas.

Tulelake, California - Wheat Fertilizer Drill Strips

Fifteen samples in each set using Modoc as the standard.

Set No. 1, Lab #1351 thru 1367 - Table 20

Wheat protein was the major faulting area. The average evaluation score was 1.9.

Set No. 2, Lab #1368 thru 1384 - Table 21

Wheat protein was the major faulting area. The average evaluation score was 1.6.

Set No. 3, Lab #1385 thru 1399 - Table 22

Test weight, wheat protein and dust color were the major faulting areas. The average evaluation score was 1.7.

Set No. 4, Lab #1402 thru 1418 - Table 23

Test weight and wheat protein were the major faulting areas. The average evaluation score was 2.0.

Tulelake, California, #127 Yield Trial - Table 24

Forty-four samples were included with this set using Modoc as the standard. The major faulting areas were wheat protein, test weight and 1000 KWT. The average evaluation score for this set was 2.0.

EXPLANATION OF ABBREVIATIONS LISTED UNDER THE HEADINGS AND UNDER MINOR AND MAJOR DEFICIENCIES ON TABLES

MINOR AND MAJOR DEFICIENCIES ON COMPUTER PRINTOUT

S or STD = Standard
TW = Test Weight

1000 KWT or KW = 1000 Kernel Weight
LG = % Large Kernels
SM = % Small Kernels

WHT PRO or WP = Wheat Protein
TOT EXT or TX = Total Extraction (Semolina Plus Flour)
SEMO EXT or SX = Semolina Extraction
DUS or DU = Semolina Dust Color Score (High score is more desirable)

MX = Mixograph Score (The higher the number, the stronger the curve)
SPK or SK = Semolina Speck Count
SEMO MIN = Semolina Mineral

FALL NO = Semolina Falling Number Value (Values above 300 are desired)
SEMO PRO or SP = Semolina Protein

VI = Spaghetti Visual Color Score (The higher the score, the more desirable)
FIRM or FR = Cooked Spaghetti Firmness Score (Approx. 6.50 to 8.50 is the desirable range)

RES = Residue in Water of Cooked Spaghetti
VALU = Sample Evaluation Number (Example 4 = Good Promise)

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 1 STATE=SOUTH DAKOTA STATION=DAY CO. NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		57.0	32.9	12	5	14.4	53.5	75	4	2	MJ	MJ				
COULTER		57.4	39.4	34	3	15.0	58.5	75	7	4	MI					
CROSBY		59.7	37.2	25	4	15.0	53.5	70	4	2		MI				MI
LLOYD		56.2	37.5	19	3	15.2	55.5	90	7	3	MJ	MI				
MEDORA		58.2	41.7	52	1	15.9	54.0	85	7	4						
MINDUM		60.5	36.4	19	4	14.7	56.0	70	5	2		MI				MI
ROLETTE		60.6	39.1	33	2	15.0	57.5	75	3	4						
RUGBY	S	60.0	36.9	35	1	14.9	51.5	75	4	3		MI			MI	
VIC	S	60.8	44.6	57	1	14.8	61.0	85	6	4						
WARD	S	58.7	38.5	37	2	15.2	53.5	80	6	4						
C 8814		51.1	37.0	30	2	14.2	55.5	80	7	3	MJ	MI				
D 793		59.2	44.6	53	1	14.9	52.0	85	7	3					MI	
D 804		59.4	35.1	16	4	15.0	59.5	95	7	4		MI				
D 7925		60.1	41.7	41	1	15.5	59.0	80	8	4						
D 8012		60.2	38.8	45	1	14.8	55.5	95	7	4						
D 8016		58.7	37.5	23	2	15.0	57.5	90	8	4		MI				
D 8019		58.7	39.2	46	1	15.4	55.5	80	8	4						
D 8034		59.4	38.5	41	2	15.4	53.0	90	8	4						
D 8082		59.7	42.0	31	4	15.3	54.0	80	7	4						
D 78177		58.9	34.2	11	6	14.2	56.5	85	6	3		MJ				
D 79103		61.0	44.1	64	1	14.7	58.5	90	5	4						
D 79104		62.1	37.5	34	3	14.5	55.0	90	6	4		MI				
D 79168		59.8	39.2	19	4	14.4	55.5	95	6	4						
D 79209		59.8	35.5	12	5	14.3	57.5	90	6	4		MI				
D 80152		59.4	35.8	10	7	14.9	58.5	95	6	4		MI	MI			
D 80162		60.0	40.0	32	3	14.7	57.5	75	6	4						
DT 371		57.4	39.4	29	3	14.8	58.5	75	8	4	MI					
DT 375		59.7	35.6	9	7	14.8	54.5	85	5	4		MI	MI			
H 81466		59.0	36.5	17	3	14.4	50.5	80	6	2		MI			MJ	
H 81485		61.1	39.5	47	2	14.9	52.0	90	8	3					MI	

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	60.2	40.0	1	15.0	55.3	80
MINOR FAULTING VALUES	58.0	37.9	6	12.5	52.3	70
MAJOR FAULTING VALUES	57.1	34.9	11	11.5	51.3	65

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 2 STATE=SOUTH DAKOTA STATION=SELBY NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		60.2	36.1	15	3	12.8	48.5	65	3	3		MJ				
COULTER		60.0	39.4	38	3	14.5	54.0	75	7	4		MI				
CROSBY		62.7	42.2	38	2	13.3	50.5	70	3	4						
LLOYD		58.7	40.3	21	3	12.8	55.5	85	5	3	MJ					
MEDORA		60.6	43.7	57	3	15.1	50.5	80	6	4						
MINDUM		62.4	40.5	38	2	13.3	53.5	65	3	4						
ROLETTE		61.1	36.4	13	3	13.3	54.0	80	2	3		MJ				
RUGBY	S	61.9	40.3	30	1	13.1	51.0	70	2	4						
VIC	S	63.5	47.6	63	1	13.9	53.0	75	4	4						
WARD	S	60.8	36.8	19	3	13.5	47.5	75	2	3		MI			MI	
C 8814		61.6	42.2	52	2	13.1	49.0	60	4	2						MI
D 793		61.7	43.9	52	1	13.6	54.5	70	4	4						
D 804		62.4	39.4	31	3	13.3	53.5	70	4	4		MI				
D 7925		58.2	34.0	8	4	13.6	52.5	75	5	2	MJ	MJ				
D 8012		61.9	41.8	54	2	13.2	55.0	70	6	4						
D 8016		61.2	43.5	52	2	13.3	54.5	70	6	4						
D 8019		62.7	44.1	66	1	13.7	55.0	70	7	4						
D 8034		61.3	39.2	48	1	13.5	49.0	75	6	4		MI				
D 8082		61.8	47.8	61	2	13.3	56.0	80	5	4						
D 78177		61.8	36.5	19	3	14.3	51.0	70	4	4		MI				
D 79107		61.4	47.8	76	1	14.1	50.5	65	4	4						
D 79104		62.6	38.9	37	2	13.6	51.5	70	4	4		MI				
D 79168		62.1	41.0	26	2	13.0	55.0	80	4	4						
D 79209		61.6	39.4	23	3	12.9	59.0	85	5	4		MI				
D 80152		60.0	36.5	14	5	13.4	56.0	85	6	4		MI				
D 80162		60.6	41.3	29	3	13.6	54.5	75	6	4						
DT 371		59.2	42.2	32	2	14.5	51.0	70	6	4	MI					
DT 375		62.0	42.2	31	1	13.2	50.5	70	5	4						
H 81466		62.6	38.9	20	3	12.7	55.0	80	4	4		MI				
H 81485		63.7	42.2	55	1	13.7	52.0	75	5	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	62.1	41.6	2	13.5	50.5	73
MINOR FAULTING VALUES	59.9	39.5	7	12.5	47.5	63
MAJOR FAULTING VALUES	59.0	36.5	12	11.5	46.5	58

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 3 STATE=MONTANA STATION=CONRAD NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		60.6	35.5	8	4	14.4	65.0	85	4	4		MI				
COULTER		60.0	36.9	23	4	14.7	63.5	85	6	4						
CROSBY		60.5	39.1	15	5	15.5	61.0	85	4	4						
LLOYD		60.3	41.5	11	6	13.8	59.0	95	7	4						
MEDORA		60.8	41.5	45	4	15.6	63.0	85	7	4						
MINDUM		61.9	39.2	22	4	15.1	62.5	65	3	1						MJ
ROLETTE		60.6	42.2	28	4	16.7	61.5	80	4	4						
RUGBY	S	60.0	37.6	15	4	15.2	60.0	85	3	4						
VIC	S	61.4	39.2	15	3	14.6	61.0	90	6	4						
WARD	S	60.3	39.8	22	3	15.8	62.5	85	4	4						
C 881-4		61.3	39.2	34	2	14.2	61.5	80	7	4						
D 793		60.3	42.4	37	5	15.2	64.0	90	7	4						
D 804		60.3	34.7	11	3	15.1	61.5	95	8	4		MI				
D 7925		60.8	39.8	19	3	14.9	61.0	85	8	4						
D 8012		59.8	37.9	31	3	14.6	63.0	100	6	4						
D 8016		59.8	13.9	22	6	15.0	62.0	90	6	3		MJ				
D 8019		59.4	37.9	29	4	16.1	62.0	80	7	4						
D 8034		59.7	38.9	33	3	15.2	57.5	90	7	3					MI	
D 8082		61.1	38.5	13	6	14.4	62.0	90	5	4						
D 78177		61.1	39.2	34	5	14.7	61.5	90	4	4						
D 79103		61.1	39.7	28	4	15.3	59.0	90	7	4						
D 79104		61.3	36.6	7	5	14.1	60.0	90	4	4		MI				
D 79168		62.1	40.0	26	2	14.8	65.5	95	6	4						
D 79209		61.0	37.6	13	3	14.2	66.0	90	5	4						
D 80152		61.1	38.3	13	4	14.6	67.0	95	7	4						
D 80162		61.0	40.2	12	4	14.5	64.5	80	6	4						
DT 371		58.7	38.9	15	4	14.8	64.0	85	6	4						
DT 375		60.6	37.7	8	6	15.2	62.0	85	5	4						
HD 81-466		60.8	38.2	13	5	13.9	61.5	95	6	4						
HD 81-485		61.0	37.7	26	5	14.7	64.0	95	8	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	60.6	38.9	3	15.2	61.2	87
MINOR FAULTING VALUES	58.4	36.8	8	12.5	58.2	77
MAJOR FAULTING VALUES	57.5	33.8	13	11.5	57.2	72

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 4 STATE=MONTANA STATION=SIDNEY NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		58.1	29.8	1	12	16.3	55.0	90	6	4		MI				
COULTER		57.8	31.8	2	10	16.6	55.0	85	7	4		MI				
CROSBY		59.0	33.3	5	10	16.1	55.0	85	4	4						
LLOYD		57.1	33.7	3	12	16.8	54.5	95	8	4						
MEDORA		58.6	33.3	5	7	17.1	56.5	90	8	4						
MINDUM		58.7	30.8	2	12	16.4	54.5	75	4	1		MI				MJ
ROLETTE		60.1	35.1	10	6	16.7	57.0	85	3	4						
RUSBY	S	58.6	33.3	4	8	17.1	57.5	90	4	4						
VIC	S	59.2	35.6	2	9	15.8	55.5	95	7	4						
WARD	S	59.4	33.7	7	7	15.7	54.5	90	4	4						
C 8814		59.4	34.8	7	5	15.4	54.0	75	7	1						MJ
D 793		58.7	40.7	1	15	16.8	55.0	100	7	4			MI			
D 804		59.4	40.3	26	5	16.4	56.5	85	7	4						
D 7925		59.8	39.2	14	5	16.2	62.5	85	8	4						
D 8012		57.6	31.9	6	9	16.9	55.5	105	8	4		MI				
D 8016		57.9	32.7	2	12	16.3	57.5	90	8	4						
D 8019		57.6	33.6	7	6	17.5	53.0	80	8	2						MI
D 8034		57.8	32.1	6	11	16.7	53.0	95	8	4						
D 8082		58.9	34.2	5	10	16.3	58.5	90	7	4						
D 78177		59.0	30.2	1	14	16.0	53.0	90	7	4		MI	MI			
D 79103		60.3	36.2	15	3	16.2	59.0	90	7	4						
D 79104		59.5	32.6	6	8	16.9	54.5	95	8	4						
D 79168		60.3	33.1	1	11	15.7	57.0	105	8	4						
D 79259		58.7	30.3	2	15	15.8	51.0	90	7	2		MI	MI		MJ	
D 80152		59.0	30.5	2	16	15.7	53.0	100	8	4		MI	MI			
D 80162		59.5	32.8	2	12	14.9	52.5	85	8	3					MI	
DT 371		56.6	35.3	7	8	15.7	53.5	85	7	4	MI					
DT 375		58.2	32.3	2	11	17.4	50.0	85	7	2					MJ	
H 81466		59.4	31.2	2	16	15.5	51.0	90	8	2		MI	MI		MJ	
H 81485		60.3	33.7	6	6	16.8	53.0	100	8	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	59.1	34.2	8	16.2	55.8	92
MINOR FAULTING VALUES	56.9	32.1	13	12.5	52.8	82
MAJOR FAULTING VALUES	56.0	29.1	18	11.5	51.8	77

***EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=MONTANA STATION=BOZEMAN NURSERY=UNIFORM

TABLE 5

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES
CANDO		61.4	26.4	24	5	13.9	64.5	85	4	3	MJ
COULTER		61.6	44.2	47	2	14.3	65.0	80	6	4	
CROSBY		61.8	39.8	26	3	14.5	62.0	80	4	4	MI
LLOYD		60.5	44.6	31	5	13.8	62.5	90	6	4	
MEDORA		61.9	47.4	68	3	15.3	62.0	85	5	4	
MINDUM		63.4	43.5	47	3	15.0	63.5	70	3	1	MJ
ROLETTE		62.7	42.9	42	2	15.0	63.5	80	3	4	
RUGBY	S	61.3	42.0	37	4	14.7	60.5	85	3	4	
VIC	S	62.2	44.4	50	2	14.4	64.0	85	5	4	
WARD	S	61.4	43.7	37	2	15.0	63.0	90	3	4	
C 881-4		61.8	43.9	49	4	14.6	64.0	80	7	4	
D 793		61.0	47.1	48	3	14.4	63.0	85	6	4	
D 804		62.1	37.2	17	8	14.7	62.0	90	7	3	MJ MI
D 7925		61.6	46.9	42	4	15.2	63.0	85	7	4	
D 8012		62.4	42.9	44	3	14.2	65.0	100	7	4	
D 8016		61.6	44.8	43	4	14.0	63.5	85	7	4	
D 8019		62.2	43.7	61	2	15.2	62.5	80	7	4	
D 8034		61.9	41.5	46	1	15.2	62.0	90	7	4	
D 8082		63.0	44.1	32	1	14.5	65.0	85	6	4	
D 78177		61.4	37.6	8	6	14.2	62.0	90	6	3	MJ
D 79103		62.6	46.7	64	2	15.1	65.5	85	4	4	
D 79104		62.2	38.2	26	3	15.0	61.5	90	7	3	MJ
D 79168		63.2	40.7	11	2	13.7	65.5	100	6	4	MI
D 79209		62.2	36.9	9	5	13.6	64.0	90	6	3	MJ
D 80152		61.9	39.2	21	4	14.5	64.0	90	6	4	MI
D 80162		62.4	42.4	23	2	14.2	63.0	85	7	4	
DT 372		60.5	46.5	34	2	14.5	64.0	80	8	4	
DT 375		62.2	43.9	24	3	15.0	63.0	85	7	4	
HD 81-466		61.4	38.6	21	5	14.2	59.0	90	7	3	MI MI
HD 81-485		62.2	45.0	45	2	14.7	62.5	95	8	4	

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	61.6	43.4	3	14.7	62.5	87
MINOR FAULTING VALUES	59.4	41.3	8	12.5	59.5	77
MAJOR FAULTING VALUES	58.5	38.3	13	11.5	58.5	72

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 6 STATE=NORTH DAKOTA STATION=WILLISTON NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		56.2	26.7	1	23	19.6	52.0	90	7	3		MI	MJ			
COULTER		56.4	31.2	4	10	18.6	53.5	85	7	4						
CROSBY		55.5	30.1	2	13	19.5	50.0	85	5	3					MI	
LLOYD		55.5	31.1	2	18	19.4	53.5	95	8	4			MI			
MEDORA		57.1	31.8	6	7	20.0	55.0	90	7	4						
MINDUM		53.7	31.3	3	6	19.4	53.5	70	5	1						MJ
ROLETTE		58.2	32.1	2	10	19.7	57.0	80	5	4						
RUGBY	S	56.8	29.6	2	13	20.0	50.0	90	5	3					MI	
VIC	S	58.2	32.6	5	10	19.4	54.5	90	8	4						
WARD	S	56.6	31.0	3	11	20.2	55.0	85	5	4						
C 8814		58.2	32.5	6	6	18.0	52.5	75	8	2						MI
D 793		56.8	34.2	9	6	18.9	55.0	90	8	4						
D 804		57.8	29.1	3	14	18.9	54.0	95	8	4						
D 7925		57.3	33.9	5	8	18.7	55.0	85	8	4						
D 8012		57.1	30.4	6	9	18.8	54.5	100	8	4						
D 8016		55.5	28.8	2	14	20.0	51.5	90	8	4		MI				
D 8019		56.3	29.2	6	9	19.7	55.0	85	8	4						
D 8034		56.3	28.6	5	8	19.0	51.0	95	8	4		MI				
D 8082		58.7	32.9	4	10	18.3	52.5	85	7	4						
D 78177		57.8	27.7	0	20	18.9	57.0	95	8	4		MI	MI			
D 79103		59.2	35.3	11	5	18.8	55.0	95	8	4						
D 79104		57.9	29.4	3	13	19.1	52.5	95	8	4						
D 79168		58.7	31.1	1	13	18.2	55.5	100	8	4						
D 79209		57.1	27.9	0	20	18.6	58.0	90	8	4		MI	MI			
D 80152		57.6	30.4	3	17	19.0	57.0	100	8	4			MI			
D 80162		58.1	30.8	2	15	18.2	55.0	85	7	4						
DT 371		54.9	31.0	3	12	19.3	55.5	90	8	4	MI					
DT 375		57.4	30.6	0	17	20.1	57.5	90	8	4			MI			
HD 81486		57.8	31.0	1	18	18.4	56.0	90	8	4			MI			
HD 81485		58.4	31.7	5	7	19.1	54.5	100	8	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	57.2	31.1	11	19.9	53.2	88
MINOR FAULTING VALUES	55.0	29.0	16	12.5	50.2	78
MAJOR FAULTING VALUES	54.1	26.0	21	11.5	49.2	73

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 7 STATE=NORTH DAKOTA STATION=CARRINGTON NURSERY=UNIFORM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
CANDO		59.0	32.1	6	10	14.1	64.5	90	4	2	MJ	MJ	MI			
COULTER		61.4	34.8	18	6	13.8	67.5	90	5	4		MI				
CROSBY		62.2	38.2	17	5	14.3	63.5	90	4	4						
LLOYD		56.5	34.7	7	13	14.7	61.5	100	7	1	MJ	MI	MI		MJ	
MEDORA		62.2	39.1	33	3	14.2	64.0	95	6	4						
MINDUM		61.3	34.4	13	8	14.6	64.0	75	3	1		MI				MJ
ROLETTE		63.7	39.1	28	3	14.2	67.5	85	3	4						
RUGBY	S	62.7	38.3	24	5	14.1	65.5	90	3	4						
VIC	S	63.2	40.5	35	3	14.0	67.5	90	5	4						
WARD	S	62.7	38.6	30	3	14.1	64.5	90	3	4						
C 881-4		59.2	35.8	21	7	14.1	60.5	80	6	1	MJ	MI			MJ	MI
D 793		63.7	44.8	51	2	13.2	68.0	90	5	4						
D 804		59.8	34.1	12	10	14.6	66.0	95	5	4	MI	MI	MI			
D 7925		62.7	43.1	44	2	13.9	68.0	85	6	4						
D 8012		62.6	36.5	31	3	13.2	68.5	100	5	4		MI				
D 8016		60.8	36.9	15	5	14.4	66.5	100	5	4		MI				
D 8019		62.2	39.7	31	3	14.3	67.0	90	5	4						
D 8034		61.6	38.2	32	2	13.9	64.5	95	5	4						
D 8082		60.2	36.6	16	7	14.3	66.5	90	7	4	MI	MI				
D 78177		60.6	32.2	5	9	14.1	64.5	95	5	3	MI	MJ	MI			
D 79103		63.4	43.1	53	2	13.8	66.0	95	4	4						
D 79104		58.2	37.0	27	3	14.0	64.0	95	5	4		MI				
D 79168		61.4	36.2	11	6	13.1	66.5	100	5	4		MI				
D 79209		60.3	34.0	7	8	13.5	65.5	90	6	3	MI	MJ				
D 80152		59.8	33.7	6	10	14.4	62.5	100	5	2	MI	MJ	MI		MI	
D 80162		59.7	39.2	24	4	14.5	65.0	95	8	3	MJ					
DT 371		61.9	38.3	16	3	14.0	65.0	85	5	4						
DT 375		59.5	35.0	8	7	14.2	65.0	90	5	3	MJ	MI				
HD 81-466		60.3	35.0	5	10	14.3	64.0	95	6	4	MI	MI	MI			
HD 81-485		63.4	40.2	28	3	14.4	68.5	100	6	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	62.9	39.1	4	14.1	65.8	90
MINOR FAULTING VALUES	60.7	37.0	9	12.5	62.8	80
MAJOR FAULTING VALUES	59.8	34.0	14	11.5	61.8	75

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 8 STATE=WASHINGTON STATION=ROYAL SLOPE NURSERY=WESTERN DURUM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
DUROX		62.6	40.7	20	4	11.7	59.5	80	4	3				MI		
GRANDUR		62.7	44.4	63	1	12.2	59.0	80	4	3				MI		
IRRIDUR		63.2	38.3	35	3	12.6	56.0	80	5	3		MI			MI	
LLOYD	S	62.7	45.2	45	2	11.3	60.5	90	5	2				MJ		
MONDC	S	63.4	40.3	41	2	11.9	58.5	80	5	3		MI		MI		
WAID		61.4	36.8	18	3	11.8	60.0	85	5	2		MJ		MI		
YAVAROS 75		64.5	45.5	63	1	11.0	59.5	70	5	1				MJ		MJ
D 79168		64.8	47.1	57	2	11.3	65.0	95	6	2				MJ		
D 79209		64.3	43.3	44	1	11.5	64.0	80	4	2				MJ		
HD 810466		64.3	44.8	49	2	11.4	63.0	85	4	2				MJ		
T 8300136		61.0	40.5	31	4	11.3	57.0	70	5	1		MI		MJ		MJ
T 8300138		62.7	42.2	31	3	11.3	60.0	80	3	2				MJ		
T 8300140		63.8	43.9	39	3	10.7	63.5	85	5	2				MJ		
T 8300143		62.6	42.7	54	1	12.2	56.0	80	6	2				MI	MI	
T 8300146		60.8	43.9	43	3	11.8	55.0	75	5	1	MI			MI	MJ	MI
T 8300147		61.9	46.1	56	1	11.6	57.5	85	5	3				MI		
T 8300175		62.9	38.2	24	5	12.1	55.5	80	6	1		MI		MI	MJ	
T 8300179		62.4	38.9	19	4	12.5	56.5	75	6	1		MI		MI	MI	MI
T 8300217 (ED		63.0	37.2	8	6	13.3	61.5	90	7	3		MJ				
TL 730468		63.0	47.8	61	2	13.0	59.5	85	4	4						
TL 730471		63.0	42.7	48	2	11.9	59.5	65	4	1				MI		MJ
UC 560		63.2	44.4	47	2	11.7	61.0	65	3	1				MI		MJ
WPB 803		62.1	50.5	68	2	11.7	60.5	80	4	3				MI		
WPB 88104		63.0	51.3	77	1	13.4	62.5	85	6	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	63.0	42.7	2	11.6	59.5	85
MINOR FAULTING VALUES	60.8	40.6	7	12.5	56.5	75
MAJOR FAULTING VALUES	59.9	37.6	12	11.5	55.5	70

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 9 STATE=IDAHO STATION=ABERDEEN NURSERY=WESTERN DURUM

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
DUROX		60.6	43.9	69	2	15.3	64.5	75	3	4						
GRANDUR		57.6	48.8	76	2	14.5	66.0	65	4	2	MI					MI
IRRIDUR		59.7	42.9	58	2	14.9	62.0	75	4	4		MI				
LLOYD	S	60.2	52.9	64	2	13.3	65.0	80	4	4						
MC KAY		60.5	34.7	31	7	12.7	54.5	30	6	1		MJ			MJ	MJ
MODOC	S	60.5	38.2	29	4	14.1	61.0	75	5	3		MJ				
OWENS		60.5	34.1	28	5	10.8	49.0	25	5	1		MJ		MJ	MJ	MJ
PONDURA		61.8	34.1	18	4	14.2	70.5	30	8	1		MJ				MJ
WAID		59.7	42.0	44	3	14.0	63.5	70	3	4		MI				
YAVAROS 79		59.8	37.5	40	3	13.3	72.0	40	8	1		MJ				MJ
EDMORE MUTANT		59.7	38.2	32	3	14.5	64.0	85	5	3		MJ				
D 0079209		60.2	38.5	22	3	12.7	67.5	85	5	3		MJ				
MD 810466		60.5	40.5	34	4	12.7	65.0	80	5	4		MI				
T 8300136		58.1	42.4	47	3	13.6	61.5	65	7	2	MI	MI				MI
T 8300138		59.4	46.1	67	1	13.9	64.0	75	4	4						
T 8300140		59.4	42.0	39	4	13.1	65.5	80	7	4		MI				
T 8300143		56.2	35.5	25	6	13.7	58.0	85	7	1	MJ	MJ			MJ	
T 8300146		55.5	42.9	37	5	14.0	58.5	70	6	1	MJ	MI			MJ	
T 8300147		57.9	46.5	53	2	13.7	60.0	80	5	3	MI				MI	
T 8300175		60.2	40.7	41	4	13.6	63.5	70	6	4		MI				
T 8300179		59.0	38.0	17	4	14.7	61.0	70	7	3		MJ				
TL 073468		61.6	36.9	41	4	14.7	72.5	30	6	1		MJ				MJ
TL 073471		61.0	38.5	52	3	13.4	71.0	50	6	1		MJ				MJ
UC 00560		59.8	42.9	38	3	12.9	65.5	60	3	1		MI				MJ
WPB-2-10-E		56.0	39.2	39	5	12.9	63.5	80	8	2	MJ	MJ				
WPB-881-4		59.5	45.5	62	2	14.5	65.0	85	8	4						
804		61.9	47.8	56	3	13.0	69.0	85	4	4						

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	60.3	45.5	3	13.7	63.0	78
MINOR FAULTING VALUES	58.1	43.4	8	12.5	60.0	68
MAJOR FAULTING VALUES	57.2	40.4	13	11.5	59.0	63

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 10 STATE=ARIZONA STATION=PINAL CO. NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
ALDURA	S	63.7	44.6	47	1	10.3	85.6	66.8	105	2	47	0.64	400	9.8	9.5	6.65	7.9	1				MJ					MJ		
GEM		65.0	54.3	84	1	9.8	86.2	67.9	80	2	50	0.58	400	9.1	9.0	5.94	8.3	1				MJ			MJ		MJ		
MEXICALI		63.6	50.3	80	3	9.9	85.6	67.3	90	3	50	0.63	400	9.0	9.5	5.90	7.8	1				MJ			MJ		MJ		
WESTBRED 881		62.7	54.3	83	1	11.5	79.9	59.5	100	6	43	0.59	400	10.6	9.0	6.48	7.4	1				MJ	MJ	MJ			MJ		
YAVAROS		64.6	53.8	86	1	9.7	83.4	64.8	80	2	23	0.54	400	9.0	9.0	5.15	7.7	1				MJ			MJ		MJ		MI
1000 D		62.3	50.8	81	1	10.1	81.1	61.3	80	4	53	0.61	400	9.5	10.5	7.02	7.6	1				MJ	MJ	MJ	MJ		MJ		

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	63.7	44.6	1	10.3	85.6	66.8	105	47	9.8	9.5	6.65
MINOR FAULTING VALUES	61.5	42.5	6	12.5	83.1	63.8	95	57	11.5	8.5	5.15
MAJOR FAULTING VALUES	60.6	39.5	11	11.5	82.1	62.8	90	62	11.0	8.0	4.40

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 11 STATE=ARIZONA STATION=MARICOPA CO. NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
ALDURA	S	63.7	51.5	83	1	13.3	82.0	62.3	100	2	87	0.67	400	12.3	9.5	6.59	6.8	3		MI						MJ			
MEXICALI	S	62.6	59.5	82	2	12.8	80.9	64.0	80	6	27	0.68	400	11.7	8.5	7.04	5.9	2							MI				
WESTBRED 881		63.3	60.2	92	1	14.1	80.1	61.9	95	7	57	0.64	400	12.9	9.5	8.75	6.7	4											
YAVAROS		64.5	62.1	88	1	12.9	80.3	61.4	70	3	50	0.62	400	11.6	8.0	7.95	7.7	1							MJ			MI	
1000 D		60.9	55.2	82	1	13.8	81.8	61.7	70	5	57	0.63	400	12.8	8.5	7.54	6.5	1	MI						MJ				

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	63.1	55.5	2	13.0	81.4	63.1	90	57	12.0	9.0	6.81
MINOR FAULTING VALUES	60.9	53.4	7	12.5	78.9	60.1	80	67	11.5	8.0	5.31
MAJOR FAULTING VALUES	60.0	50.4	12	11.5	77.9	59.1	75	72	11.0	7.5	4.56

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 12 STATE=CALIFORNIA STATION=EL CENTRO NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
ALDURA	S	62.0	45.0	51	1	13.1	83.9	62.8	100	3	70	0.70	400	12.1	9.5	7.37	6.3	4		MI									
FRIGATE 'S'		61.7	44.1	59	1	13.5	84.2	62.9	90	3	53	0.61	400	12.4	9.0	7.15	6.0	4		MI									
KINGFISHER 'S'		64.0	48.8	72	2	12.5	85.7	67.7	75	3	37	0.59	400	11.5	9.0	6.89	5.8	1				MI				MJ		MI		
MALLARD 'S'		62.8	48.1	72	2	12.5	83.4	64.8	90	6	73	0.68	400	11.2	9.0	7.65	6.8	2				MI						MI		
MEXICALI	S	62.5	47.6	80	2	12.1	84.1	66.6	85	6	53	0.59	400	10.9	9.0	7.08	6.3	1				MI						MJ		
MODOC		64.3	42.9	55	2	12.9	83.9	65.4	85	4	50	0.64	400	11.6	9.0	7.26	6.1	4		MI									
ROKEL 'S'		61.1	43.3	63	2	12.1	83.7	65.0	95	7	40	0.69	400	11.2	9.0	7.71	5.9	2		MI		MI						MI		
WESTBRED 881	S	61.7	51.0	82	1	13.4	83.5	64.6	95	8	73	0.60	400	12.1	9.5	8.88	5.7	4											
YAVAROS		64.6	43.5	61	3	13.3	83.4	62.9	85	5	30	0.58	400	11.9	9.5	8.19	6.8	4		MI									
D 8204		60.0	48.5	77	1	12.0	86.0	65.8	90	3	33	0.61	400	10.5	9.5	6.74	7.1	1				MI						MJ		
D 8209		62.1	42.0	50	4	12.1	82.9	63.0	100	3	87	0.62	400	10.9	9.5	6.80	6.3	1		MJ		MI					MJ	MJ		
NJORO 231		60.7	41.2	35	2	13.8	84.1	63.6	80	4	57	0.60	400	12.6	9.5	7.67	5.9	1		MJ						MI				
NK 79D893		60.7	39.2	35	2	12.1	87.2	64.5	105	3	23	0.66	400	10.9	9.5	7.65	7.1	1		MJ		MI						MJ		
P881-660		61.9	44.8	50	2	13.2	84.6	61.5	95	5	37	0.60	400	12.1	9.5	7.34	7.5	3		MI				MI						
P881-738		60.3	42.6	35	5	12.8	82.8	59.0	105	3	30	0.59	400	12.1	9.0	7.65	6.6	1		MJ				MJ						
TL-T8A		62.1	31.8	16	5	11.6	75.6	53.7	55	3	93	0.42	400	10.2	5.5	7.45	6.5	1		MJ		MI	MJ	MJ	MJ	MJ	MJ	MJ	MJ	
TL 73-468		62.2	36.2	25	3	13.5	82.1	60.0	95	3	43	0.60	400	12.5	8.5	7.37	6.4	1		MJ				MJ						
TL 73-471		60.7	37.5	20	3	12.9	84.4	62.1	80	5	43	0.71	400	11.8	9.0	8.25	7.2	1		MJ						MI				
TL 74-30		61.5	38.3	19	4	13.6	83.8	61.4	85	5	37	0.68	400	12.6	9.5	9.55	6.1	2		MJ				MI						
TL 75-409		60.7	39.1	27	4	13.1	84.4	61.6	95	4	33	0.67	400	11.9	8.5	7.28	7.1	2		MJ				MI						
UC 560		61.2	42.4	29	3	12.6	86.2	64.3	75	3	60	0.64	400	11.6	8.5	7.41	6.9	1		MJ						MJ				
UC 639		60.7	42.4	55	2	12.4	85.2	65.4	70	6	43	0.70	400	11.6	8.0	6.61	7.2	1		MJ		MI				MJ			MI	
UC 640		62.6	49.0	77	1	12.8	86.1	66.5	90	3	70	0.61	400	11.5	9.0	6.78	7.1	3										MI		
UC 641		62.8	41.7	54	2	13.1	84.5	64.7	80	6	30	0.62	400	11.8	8.5	7.58	7.4	1		MJ						MI				
UC 642		63.2	44.6	57	3	13.6	84.4	64.1	90	3	83	0.56	400	12.0	9.0	6.37	7.2	3		MI							MJ			
UC 643		63.3	46.1	63	2	12.8	85.0	64.5	80	3	67	0.63	400	12.1	8.0	5.98	6.7	1								MI			MI	MI
UC 644		61.4	42.0	50	2	12.4	84.8	65.5	70	4	63	0.66	400	11.4	7.5	7.93	7.6	1		MJ		MI				MJ		MI	MJ	
UC 645		63.6	51.0	70	1	12.9	83.9	66.0	75	4	27	0.60	400	11.6	8.0	7.45	6.7	1								MJ			MI	
UC 646		63.6	52.1	78	1	12.8	83.5	65.1	80	3	30	0.61	400	11.6	8.5	7.58	6.4	2								MI				
UC 647		63.9	52.9	77	1	12.8	84.6	65.0	80	6	53	0.56	400	11.7	8.0	7.80	7.2	1								MI			MI	
UC 648		63.0	43.9	63	2	13.4	84.4	63.6	65	4	43	0.63	400	12.3	6.0	7.56	7.0	1		MI						MJ			MJ	
UC 649		62.8	46.5	59	1	12.3	85.0	66.0	65	3	37	0.61	400	11.4	6.0	6.91	7.6	1				MI				MJ		MI	MJ	

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	62.1	47.9	1	12.9	83.8	64.7	93	65	11.7	9.3	7.78
MINOR FAULTING VALUES	59.9	45.8	6	12.5	81.3	61.7	83	75	11.5	8.3	6.28
MAJOR FAULTING VALUES	59.0	42.8	11	11.5	80.3	60.7	78	80	11.0	7.8	5.53

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 13 STATE=ARIZONA STATION=MESA NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
ALDURA	S	63.0	49.7	82	1	12.7	84.4	64.7	95	4	40	0.55	400	11.2	9.5	6.00	6.9	3									MI		
CANDO	S	61.7	40.3	30	3	12.5	84.3	64.0	95	3	23	0.63	400	11.4	9.5	6.98	6.7	1		MJ		MI					MI		
WESTBRED 881	S	62.9	57.4	88	1	13.1	83.3	64.4	100	6	43	0.61	400	11.8	9.5	7.45	6.5	4											
D-46		63.0	55.2	83	1	12.7	84.9	65.5	90	6	23	0.63	400	11.9	9.5	7.19	6.9	4											
D-893		64.9	42.4	65	1	12.3	84.6	63.5	105	2	20	0.62	400	10.9	9.5	6.18	6.7	1		MJ		MI					MJ		
P 881-620		64.4	54.9	80	1	11.9	85.3	65.0	95	4	20	0.53	400	10.7	9.5	6.42	7.5	1				MI					MJ		
P 881-738		62.5	53.2	80	1	11.6	83.7	64.3	100	3	23	0.58	400	10.5	9.5	6.29	6.9	1				MI					MJ		
SHWA'S'-MEX75/Y		64.5	50.0	80	1	12.9	84.3	65.1	75	5	37	0.55	400	11.1	8.0	7.32	6.9	1							MJ		MI	MJ	
W-1		63.0	53.5	83	1	13.0	83.6	63.0	90	5	43	0.50	400	11.6	9.5	7.13	6.8	4											
W-4		62.6	52.9	83	2	13.5	82.9	62.7	80	8	27	0.59	400	12.0	9.0	7.52	7.2	1							MJ				
W-6		63.1	52.9	87	1	13.4	84.4	62.6	80	5	57	0.51	400	11.9	9.0	7.30	7.0	1							MJ	MJ			
W-30 LS-31		64.1	52.6	84	2	12.2	83.5	64.9	85	4	30	0.56	400	10.8	9.0	5.98	7.2	1				MI			MI		MJ		
W-46 LS-29		64.6	52.3	86	1	11.5	83.8	65.9	95	5	27	0.51	400	10.4	9.5	6.42	7.5	1				MJ					MJ		
W-266		61.9	46.7	69	2	12.3	84.5	64.5	95	4	47	0.61	400	11.1	9.5	6.16	7.3	2		MI		MI				MI	MI		
W-269		62.7	49.3	76	1	12.8	83.3	63.7	105	3	33	0.57	400	11.2	9.5	6.05	7.3	3									MI		
W-315		64.3	55.5	86	1	13.3	84.6	64.0	80	5	20	0.63	400	11.9	9.0	7.52	6.9	1							MJ				

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	62.5	49.1	2	12.8	84.0	64.4	97	35	11.5	9.5	6.81
MINOR FAULTING VALUES	60.3	47.0	7	12.5	81.5	61.4	87	45	11.5	8.5	5.31
MAJOR FAULTING VALUES	59.4	44.0	12	11.5	80.5	60.4	82	50	11.0	8.0	4.56

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1982 CROP

TABLE 14

STATE=CALIFORNIA STATION=DELTA AREA NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	ER
ALDURA	S	64.9	51.8	80	1	10.6	84.4	63.2	95	3	20	0.61	400	9.6	9.5	5.79	7.8	1		MI		MJ					MJ		
ERIGATE 'S'		64.6	48.3	79	1	10.9	83.8	64.0	90	4	37	0.61	400	10.0	9.0	6.18	7.4	1		MJ		MJ					MJ		
GEDIZ 1		65.2	51.5	83	1	11.2	82.3	61.2	85	4	30	0.57	400	10.0	9.0	6.00	7.8	1		MI		MJ					MJ		
KINGFISHER 'S'		65.1	50.5	85	1	10.5	82.6	63.4	65	3	23	0.60	400	9.4	8.0	5.49	7.9	1		MI		MJ			MJ		MJ		
LOON		64.8	48.3	83	1	10.9	82.5	61.4	60	4	50	0.61	400	9.9	7.5	6.35	7.0	1		MJ		MJ			MJ	MJ	MJ		
MALLARD 'S'		64.3	57.3	90	1	10.4	81.5	62.2	85	6	30	0.67	400	9.7	8.0	6.57	7.7	1				MJ					MJ		
MEXICALI	S	64.7	57.8	92	1	10.5	83.3	64.4	90	6	37	0.64	400	9.3	8.0	5.42	6.8	1				MJ					MJ		
MODOC	S	65.7	49.5	84	1	11.6	80.4	60.4	80	5	40	0.63	400	10.3	8.0	6.61	8.5	1		MI		MI					MJ		
NJORO 231		63.6	47.4	70	1	10.4	82.9	63.8	75	3	33	0.59	400	9.4	8.0	5.23	7.5	1		MJ		MJ			MI		MJ		
ROKEL 'S'		63.4	49.0	82	1	10.4	82.3	63.7	90	4	40	0.61	400	9.6	8.0	6.31	8.1	1		MJ		MJ					MJ		
STIFFTAIL 3		63.9	57.8	90	1	11.0	82.9	64.5	80	6	33	0.59	400	9.9	8.5	5.96	7.7	1				MJ					MJ		
STIFFTAIL 4		64.6	55.9	90	1	10.5	83.2	64.8	75	5	27	0.56	400	9.5	7.5	5.75	6.5	1				MJ			MI		MJ		
WESTBRED 881	S	64.0	58.5	93	1	12.1	82.8	63.2	90	7	37	0.61	400	10.7	8.0	6.65	7.8	1				MI					MJ		
YAVAROS		66.0	50.8	90	1	11.7	82.2	60.6	80	7	30	0.65	400	10.4	8.0	6.44	8.8	1		MI		MI					MJ		
CD 3935		64.5	53.5	84	1	11.1	81.3	62.6	75	4	33	0.64	400	10.3	8.0	7.00	7.7	1				MJ			MI		MJ		
CD 4071		64.8	53.2	85	1	10.9	83.7	64.7	75	5	17	0.60	400	9.9	7.5	7.08	7.8	1				MJ			MI		MJ		
CD 8130		64.5	54.3	87	1	10.5	83.6	64.1	60	4	23	0.61	400	9.6	7.5	6.09	8.8	1				MJ			MJ		MJ		
CD 14472		64.2	50.5	85	1	10.9	83.8	63.9	75	3	43	0.61	400	10.0	7.5	.	.	1		MI		MJ			MI		MJ		
D 8204		62.3	50.0	83	1	9.1	78.3	59.4	85	3	17	0.66	400	8.6	8.0	5.70	8.6	1	MI	MI		MJ	MJ	MI			MJ		
D 8209		64.6	49.0	82	1	10.0	80.2	60.9	85	3	47	0.60	400	9.5	8.0	.	.	1		MJ		MJ	MI			MI	MJ		
NK 790893		66.3	48.3	81	1	10.4	81.7	61.9	95	3	27	0.57	400	9.4	9.0	6.20	8.0	1		MJ		MJ					MJ		
P 881-660		64.8	48.1	77	1	9.6	81.1	61.9	85	4	17	0.63	400	9.1	8.0	.	.	1		MJ		MJ					MJ		
P 881-738		63.2	44.2	59	2	10.7	81.5	61.2	105	4	47	0.60	400	10.0	8.0	7.11	8.3	1		MJ		MJ				MI	MJ		
TL 73-468		64.3	43.7	66	1	10.8	83.0	61.8	95	3	23	0.63	400	9.9	8.0	5.62	9.0	1		MJ		MJ					MJ		
TL 73-471		64.1	46.3	78	1	10.3	83.2	60.3	70	4	27	0.61	400	9.5	7.5	6.37	8.4	1		MJ		MJ			MJ		MJ		
TL 74-30		63.8	42.9	64	1	10.4	81.9	61.9	80	3	20	0.65	400	9.6	8.0	6.22	7.3	1		MJ		MJ					MJ		
TL 75-409		63.8	45.7	71	1	10.3	81.3	60.8	90	3	70	0.54	400	9.6	9.0	6.39	6.7	1		MJ		MJ				MJ	MJ		
UC 560		63.9	48.3	74	1	10.4	83.2	64.4	75	3	57	0.64	400	9.7	8.0	6.65	6.7	1		MJ		MJ			MI	MJ	MJ		
UC 639		63.9	51.3	91	1	10.6	84.0	64.7	65	6	30	0.62	400	9.4	7.5	6.18	7.1	1		MI		MJ			MJ		MJ		
UC 640		64.6	59.9	94	1	9.8	81.6	63.6	85	3	47	0.64	400	9.2	9.0	5.55	7.2	1				MJ				MI	MJ		
UC 644		64.2	46.9	84	1	10.2	82.4	62.4	60	4	53	0.64	400	9.4	7.0	6.03	7.0	1		MJ		MJ			MJ	MJ	MJ	MJ	MI

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	ER
AVG OF STANDARDS	64.8	54.4	1	11.2	82.7	62.8	86	34	10.0	8.4	6.12
MINOR FAULTING VALUES	62.6	52.3	6	12.5	80.2	59.8	76	44	11.5	7.4	4.62
MAJOR FAULTING VALUES	61.7	49.3	11	11.5	79.2	58.8	71	49	11.0	6.9	3.87

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 15 STATE=CALIFORNIA STATION=KINGS CO. NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
ALDURA	S	63.9	47.1	85	1	8.6	80.7	61.4	95	2	33	0.63	400	7.6	9.5	5.16	7.7	1		MJ		MJ						MJ		
FRIGATE 'S'		64.5	52.1	90	1	8.7	77.8	59.5	85	2	27	0.66	400	8.0	9.0	5.10	7.5	1				MJ	MI					MJ		
GEDIZ 1		64.9	53.2	88	1	8.4	80.0	61.4	90	2	60	0.61	400	7.6	8.0	5.94	8.3	1				MJ						MJ		MI
KINGFISHER'S'		64.5	55.9	92	1	8.6	79.0	60.3	65	1	23	0.63	400	8.0	.	.	.	1				MJ			MJ			MJ		
LOON		64.0	50.3	85	1	10.1	82.9	62.9	65	3	63	0.65	400	9.1	9.5	4.47	9.0	1		MI		MJ			MJ			MJ		
MALLARD 'S'		62.8	59.5	95	1	8.1	76.3	57.8	80	3	40	0.71	400	7.4	9.5	4.49	8.3	1				MJ	MJ	MJ	MI			MJ		
MEXICALI	S	62.5	56.5	92	1	8.9	78.4	61.3	85	4	50	0.68	400	7.8	9.0	4.84	9.2	1				MJ	MI					MJ		
MODOC	S	65.5	50.3	87	1	9.7	81.8	62.1	85	3	98	0.69	400	8.6	9.5	6.24	7.8	1		MI		MJ					MJ	MJ		
NJORO 231		62.5	49.0	79	1	9.0	79.7	61.1	75	1	37	0.61	400	8.3	8.5	5.18	8.0	1		MI		MJ			MJ			MJ		
ROKEL 'S'		62.4	53.5	91	1	7.8	74.2	57.2	85	3	27	0.63	400	7.2	9.5	5.46	7.8	1				MJ	MJ	MJ				MJ		
STIFFTAIL 3		64.2	61.7	96	1	8.8	80.3	62.3	80	1	50	0.61	400	8.0	8.5	5.81	7.7	1				MJ			MI			MJ		
STIFFTAIL 4		64.8	61.7	97	1	8.5	82.3	63.5	75	4	13	0.64	400	7.7	9.0	6.57	8.5	1				MJ			MJ			MJ		
WESTBRED 881	S	63.7	59.2	95	1	9.8	83.2	64.0	95	5	50	0.66	400	8.8	9.5	6.87	8.0	1				MJ						MJ		
YAVAROS		65.3	50.3	88	1	10.3	81.9	61.7	85	3	47	0.68	400	9.2	9.0	6.59	7.6	1		MI		MJ						MJ		
CD 3935		64.7	54.6	90	1	9.1	82.2	63.7	80	3	53	0.65	400	8.2	9.0	5.55	8.6	1				MJ			MI			MJ		
CD 4071		63.9	51.8	88	1	9.0	88.5	63.0	75	3	13	0.65	400	8.0	9.0	5.85	7.6	1				MJ			MJ			MJ		
CD 8130		63.4	53.5	88	1	8.8	79.0	59.7	65	3	20	0.62	400	8.0	8.0	5.12	7.9	1				MJ			MJ			MJ		MI
CD 14472		64.8	55.6	88	1	9.4	83.5	63.7	75	2	23	0.63	400	8.5	8.0	5.14	8.3	1				MJ			MJ			MJ		MI
D 8204		60.8	54.6	88	1	8.5	75.9	57.3	85	4	63	0.64	400	7.7	10.0	4.75	10.0	1	MJ			MJ	MJ	MJ				MJ		
D 8209		62.9	51.0	88	1	8.3	73.7	55.5	85	2	37	0.64	400	7.8	9.5	4.77	8.9	1		MI		MJ	MJ	MJ				MJ		
NK 79D893		65.4	46.1	82	1	8.9	78.6	58.7	95	3	37	0.67	400	8.0	9.0	5.70	8.2	1		MJ		MJ		MI				MJ		
P 881-660		64.1	51.8	88	1	9.0	82.6	63.1	95	3	33	0.66	400	8.3	9.5	5.23	8.9	1				MJ						MJ		
P 881-738		62.8	50.3	83	1	9.1	79.9	60.2	100	3	43	0.70	400	8.4	9.5	5.29	8.8	1		MI		MJ						MJ		
TL 73-468		63.8	46.3	83	1	9.3	81.3	60.7	95	2	37	0.67	400	8.4	10.0	5.36	9.0	1		MJ		MJ						MJ		
TL 73-471		63.0	50.3	90	1	8.4	77.9	58.7	75	3	47	0.73	400	8.0	8.0	5.10	9.5	1		MI		MJ	MI	MI	MJ			MJ		MI
TL 74-30		64.6	46.7	78	1	9.3	83.8	62.9	80	2	27	0.68	400	8.4	9.0	6.03	7.6	1		MJ		MJ			MI			MJ		
TL 75-409		63.3	51.8	85	1	8.7	77.9	58.7	90	2	30	0.65	400	8.0	9.5	5.16	8.2	1				MJ	MI	MI				MJ		
UC 560		63.0	47.8	75	1	9.2	81.4	61.6	75	2	50	0.71	400	8.2	8.0	5.64	7.8	1		MJ		MJ			MJ			MJ		MI
UC 639		63.1	53.8	90	1	8.3	79.2	60.7	65	3	33	0.70	400	7.6	8.0	4.58	8.6	1				MJ			MJ			MJ		MI
UC 640		64.7	59.9	95	1	8.9	81.7	62.9	85	1	43	0.67	400	7.9	9.0	4.60	8.2	1				MJ						MJ		
UC 644		63.3	48.1	89	1	9.1	81.0	61.7	60	3	47	0.67	400	8.3	8.0	5.14	7.6	1		MJ		MJ			MJ			MJ		MI

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	63.9	53.3	1	9.2	81.0	62.2	90	58	8.2	9.4	5.78
MINOR FAULTING VALUES	61.7	51.2	6	12.5	78.5	59.2	80	68	11.5	8.4	4.28
MAJOR FAULTING VALUES	60.8	48.2	11	11.5	77.5	58.2	75	73	11.0	7.9	3.53

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOCD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 16 STATE=NORTH DAKOTA STATION=MINOT NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES
CANDO		61.6	35.5	6	2	13.6	82.4	62.7	110	4	37	0.57	400	12.8	9.5	5.98	5.8	3	MJ
CROSBY		61.8	39.1	24	2	13.8	83.1	62.9	105	3	40	0.54	400	12.7	9.5	6.03	6.2	4	MI
LLOYD		62.4	38.5	13	1	13.6	81.3	61.0	110	5	63	0.54	400	12.5	9.5	7.08	6.3	3	MI
RUGBY		61.1	38.3	22	2	14.2	83.0	62.6	105	5	43	0.54	400	13.6	9.5	5.72	6.2	3	MJ
VIC	S	62.4	43.5	37	1	14.5	82.0	61.7	110	7	37	0.51	400	13.7	10.0	7.13	6.4	4	
WARD		61.4	37.6	23	2	14.6	83.0	62.4	110	3	10	0.53	400	13.9	9.5	6.05	6.2	3	MJ

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	62.4	43.5	1	14.5	82.0	61.7	110	37	13.7	10.0	7.13
MINOR FAULTING VALUES	60.2	41.4	6	12.5	79.5	58.7	100	47	11.5	9.0	5.63
MAJOR FAULTING VALUES	59.3	38.4	11	11.5	78.5	57.7	95	52	11.0	8.5	4.88

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1982 CROP

TABLE 17 STATE=NORTH DAKOTA STATION=LANGDON NURSERY=FIELD PLOT

VARIETY	STD	TW	1000 KWT	% LG	% SM	WHT PRO	TOT EXT	SEMO EXT	DUS	MX	SPK	SEMO MIN	FALL NO	SEMO PRO	VI	FIRM	RES	** VALU	DEFICIENCIES TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
CANDO		60.3	37.5	25	2	14.1	82.8	62.4	105	3	33	0.69	400	13.4	9.5	7.08	5.4	2			MJ								MI
CROSBY		61.8	40.0	35	1	14.4	83.4	63.5	100	3	50	0.72	400	13.8	9.0	7.37	6.1	2			MJ								MI
LLOYD		59.7	45.8	48	1	13.9	83.8	63.6	105	7	20	0.72	400	13.0	9.5	7.62	6.1	3		MI	MJ								
RUGBY		61.4	42.2	54	1	14.7	81.7	62.1	95	3	17	0.68	400	13.9	9.0	5.90	6.0	1			MJ								MJ
VIC	S	62.7	51.3	82	1	15.7	81.8	63.1	100	6	57	0.62	400	14.8	9.0	9.07	5.5	4											
WARD		61.6	39.8	49	2	14.2	85.2	65.3	100	3	40	0.67	400	13.7	9.0	5.70	5.8	1			MJ								MJ

DEFICIENCIES	TW	KW	SM	WP	TX	SX	DU	SK	SP	VI	FR
AVG OF STANDARDS	62.7	51.3	1	15.7	81.8	63.1	100	57	14.8	9.0	9.07
MINOR FAULTING VALUES	60.5	49.2	6	12.5	79.3	60.1	90	67	11.5	8.0	7.57
MAJOR FAULTING VALUES	59.6	46.2	11	11.5	78.3	59.1	85	72	11.0	7.5	6.82

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

TABLE 18 STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

VARIETY STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
***REP I ***															
1983 N.D. STD S	61.6	46.3	51	2	14.0	71.5	80	6	4						
CASTELDELMONT	64.0	48.5	83	1	10.9	70.0	65	3	1				MJ		MJ
CASTELPORZIAM	60.5	58.1	92	1	12.0	69.5	65	5	1				MI		MJ
CRESO	60.6	53.2	74	1	11.7	64.0	60	5	1				MI	MJ	MJ
VALGERADO	60.6	52.1	77	1	13.0	68.0	60	7	1					MI	MJ
BA 80/57	61.6	54.3	87	1	13.3	68.5	65	6	1					MI	MJ
CCB2	62.4	64.1	96	1	13.5	68.5	60	7	1					MI	MJ
DR	57.6	45.0	51	1	11.0	65.5	60	4	1	MJ			MJ	MJ	MJ
ND 6644	62.9	53.8	86	1	13.8	70.5	70	3	2						MI
***REP II ***															
1983 N.D. STD S	61.6	46.3	51	2	14.0	71.5	80	6	4						
CASTELDELMONT	61.4	54.9	85	2	12.5	64.6	70	5	1				MI	MJ	MI
CASTELPORZIAM	61.6	56.2	83	1	11.8	66.5	70	5	1				MI	MJ	MI
CRESO	61.8	54.6	85	1	12.2	67.5	60	5	1				MI	MJ	MJ
VALGERADO	61.3	50.5	66	2	13.0	61.0	70	6	1					MJ	MI
BA 80/57	61.9	58.1	88	1	13.4	68.5	65	6	1					MI	MJ
CCB2	63.2	59.9	92	1	12.4	67.5	65	6	1				MI	MJ	MJ
DR	57.3	51.3	51	3	11.4	59.3	55	3	1	MJ			MJ	MJ	MJ
ND 6644	63.2	54.1	83	1	14.5	69.0	70	3	2						MI

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	61.6	46.3	2	14.0	71.5	80
MINOR FAULTING VALUES	59.4	44.2	7	12.5	68.5	70
MAJOR FAULTING VALUES	58.5	41.2	12	11.5	67.5	65

**EVALUATION 1=NO PROMISE. 2=LITTLE PROMISE. 3=SOME PROMISE. 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

#130 KONZAR

TABLE 19

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
ANZA		60.6	32.5	22	4	11.4	71.0	35	4	1		MJ		MJ		MJ
LEEDS		64.2	47.6	74	1	13.8	58.5	80	2	4						
PRODURA	S	62.9	42.5	54	3	12.6	55.0	60	2	4						
SENTRY		63.5	39.1	38	2	14.0	54.0	70	2	4		MI				
YAVAROS	S	62.7	42.0	47	2	11.4	56.0	70	3	2				MJ		
YOLO		61.6	30.8	18	5	10.5	67.0	45	4	1		MJ		MJ		MJ
CI 017423		62.4	40.3	44	2	12.1	55.0	75	4	3				MI		
CI 017438		61.9	39.1	31	3	11.8	60.0	75	3	3		MI		MI		
CI 017466		64.2	41.7	54	1	12.5	55.0	75	3	3				MI		
CI 017806		62.4	40.3	39	2	12.0	53.5	80	3	3				MI		
D 771		62.1	45.5	58	1	11.3	57.5	80	3	2				MJ		
D 77200		63.2	41.5	42	2	11.6	56.5	85	3	3				MI		
D 79168		63.8	43.3	48	1	11.4	58.0	85	3	2				MJ		
D 79209		62.1	40.3	29	2	11.6	56.5	80	3	3				MI		
HD 81-466		62.9	43.1	44	2	11.7	56.5	80	4	3				MI		
T 8300136		60.2	39.8	41	2	11.8	57.0	65	4	3	MI	MI		MI		
T 8300139		61.3	41.8	43	2	12.1	52.5	75	4	2				MI	MI	
T 8300140		61.6	42.4	45	1	11.8	53.5	75	4	3				MI		
T 8300143		61.1	43.3	57	1	12.5	47.5	80	5	1				MI	MJ	
T 8300146		59.8	44.4	50	3	12.9	47.0	70	5	2	MI				MJ	
T 8300147		60.2	44.6	59	1	12.5	50.0	80	5	1	MI			MI	MJ	
T 8300175		63.2	40.3	38	3	12.6	50.0	75	5	2					MJ	
T 8300179		62.1	38.9	28	3	12.8	48.0	70	7	2		MI			MJ	
T 9300217 *		63.4	38.3	25	2	12.9	.	85	5	4		MI				
TL-73-457		63.9	42.6	52	1	12.6	57.0	80	3	4						
TL-73-468		62.2	45.5	70	1	12.4	56.5	80	3	3				MI		
TL-73 471		63.2	42.7	52	3	12.4	54.5	65	4	3				MI		
TL-73-506		62.4	45.0	60	2	12.6	56.0	70	4	4						
TL-74-30		62.1	37.6	36	4	12.8	40.0	70	3	2		MI			MJ	
TL-75-16 *		61.4	38.3	39	3	12.3	.	80	3	3		MI		MI		
TL-75-393		60.6	30.3	20	6	12.7	55.0	60	4	3		MJ				
TL-75-409		60.8	36.8	35	3	12.6	59.5	70	4	3		MJ				
WA 6518		61.6	43.5	58	1	12.2	60.0	75	4	3				MI		
WA 6521		63.0	41.2	50	2	12.8	59.0	80	3	4						
WA 6525		61.6	40.2	46	2	12.3	54.0	75	4	3				MI		
WA 6621		63.9	46.3	64	1	11.5	54.5	70	3	2				MJ		
WA 6627		62.2	46.1	60	2	12.5	60.5	75	3	3				MI		
WA 6630		60.3	39.7	31	3	12.1	62.4	75	4	3	MI	MI		MI		
WA 6755		59.5	35.7	23	5	12.6	58.4	75	5	2	MJ	MJ				
WA 6869 *		61.6	42.2	41	2	11.9	.	75	4	3				MI		
WPB-81 *		61.4	45.7	72	1	12.5	.	75	5	3				MI		
WPB-807 *		58.2	38.6	40	5	11.6	.	75	7	2	MJ	MI		MI		
WPB-881 *		62.7	46.1	65	2	12.7	.	80	6	4						
UC 496		63.4	44.8	.	.	11.3	.	.	.	2				MJ		
UC 512		63.7	39.4	37	3	11.8	55.5	70	3	3		MI		MI		
UC 514		61.8	44.1	47	1	12.1	57.0	75	2	3				MI		
UC 516		62.6	40.2	43	2	12.4	56.5	65	4	3				MI		
UC 518		62.7	44.2	54	2	13.1	56.5	75	3	4						
UC 560		61.6	40.5	33	2	11.8	56.0	65	3	3				MI		

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	62.8	42.3	3	12.0	55.5	65
MINOR FAULTING VALUES	60.6	40.1	9	12.5	52.5	55
MAJOR FAULTING VALUES	59.7	37.1	13	11.5	51.5	50

***EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

* MILL PLUGGED, SO THE SEMOLINA EXTRACTION DATA WAS UNRELIABLE.

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

WHEAT FERTILIZER DRILLSTRIPS

LAB # 1351 - 1367

TABLE 20

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
MODOC	S	64.6	45.7	70	1	11.0	59.0	75	3	2				MJ		
73-19		63.7	43.7	59	1	9.7	62.5	69	1	2				MJ		
73-91		62.7	44.8	54	2	11.9	60.0	70	3	3				MI		
73-457		61.6	48.5	62	1	10.3	61.5	65	1	1	MI			MJ		MI
73-471		63.0	48.5	79	1	9.9	60.0	55	3	1				MJ		MJ
73-506		62.7	48.1	79	1	10.0	61.5	65	1	1				MJ		MI
74-30		62.6	53.5	86	1	10.2	61.5	80	2	2				MJ		
75-409		63.2	48.8	76	1	10.2	59.0	70	2	2				MJ		
75-409 (2)		63.0	52.1	80	1	11.5	58.5	75	3	2				MJ		
80-1057		62.9	53.5	83	1	11.8	59.0	75	3	3				MI		
80-1102		62.6	44.2	72	1	10.2	61.5	55	4	1				MJ		MJ
80-1104		63.2	51.0	81	1	9.7	60.5	70	2	2				MJ		
80-1248		62.4	54.1	85	1	9.7	64.5	70	2	2				MJ		
80-1253		62.6	46.7	72	1	10.9	65.0	75	3	2				MJ		
81-1530		61.3	50.8	84	1	11.1	67.5	55	3	1	MJ			MJ		MJ

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	64.6	45.7	1	11.0	59.0	75
MINOR FAULTING VALUES	62.4	43.6	6	12.5	56.0	65
MAJOR FAULTING VALUES	61.5	40.6	11	11.5	55.0	60

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

WHEAT FERTILIZER DRILLSTRIPS

LAB # 1368 - 1384

TABLE 21

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
M0000	S	65.1	41.2	54	1	10.4	62.5	75	2	2				MJ		
73-19		63.8	42.4	50	1	9.8	64.5	70	1	2				MJ		
73-91		63.7	48.1	70	1	11.1	64.0	65	2	1				MJ		MI
73-457		61.6	47.6	57	1	10.4	65.0	70	2	1	MJ			MJ		
73-471		63.4	46.9	77	1	9.6	63.5	55	3	1				MJ		MJ
73-506		63.7	48.8	76	1	9.7	63.0	65	1	1				MJ		MI
74-30		62.6	52.9	88	1	10.0	63.5	80	2	2	MI			MJ		
75-409		63.0	42.4	50	1	9.6	62.0	75	2	2				MJ		
75-409 (2)		62.6	50.8	76	1	10.5	62.0	70	2	2	MI			MJ		
80-1057		63.5	55.9	84	1	10.7	63.5	70	2	2				MJ		
80-1102		62.4	47.4	80	1	9.4	62.0	60	1	1	MI			MJ		MJ
80-1104		63.2	50.8	79	1	9.2	63.5	70	1	2				MJ		
80-1248		62.9	54.1	85	1	9.1	63.0	70	2	2				MJ		
80-1253		62.6	47.6	78	1	9.9	64.5	65	3	1	MI			MJ		MI
81-1530		61.4	51.3	86	1	9.8	64.5	55	2	1	MJ			MJ		MJ

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	65.1	41.2	1	10.4	62.5	75
MINOR FAULTING VALUES	62.9	39.1	6	12.5	59.5	65
MAJOR FAULTING VALUES	62.0	36.1	11	11.5	58.5	60

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

WHEAT FERTILIZER DRILLSTRIPS

LAB # 1385 - 1399

TABLE 22

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
MODOC	S	65.4	40.7	44	1	11.5	59.0	80	3	2				MJ		
73-19		63.7	40.2	35	2	11.1	61.5	75	3	2				MJ		
73-91		63.0	44.2	50	1	11.2	60.0	70	3	1	MI			MJ		MI
73-457		60.6	44.4	31	4	11.7	49.3	65	3	1	MJ			MI	MJ	MJ
73-471		64.5	46.9	67	1	11.0	63.0	60	5	1				MJ		MJ
73-506		64.6	45.5	64	1	10.3	64.0	70	2	1				MJ		MI
74-30		63.0	50.3	82	1	11.1	62.5	80	2	2	MI			MJ		
75-409		63.2	42.7	44	2	10.6	61.5	75	2	2				MJ		
75-409 (2)		63.0	52.1	76	1	10.4	62.0	75	2	2	MI			MJ		
80-1057		63.0	48.8	77	1	10.9	61.0	70	1	1	MI			MJ		MI
80-1102		62.7	43.3	63	1	10.8	59.0	70	3	1	MI			MJ		MI
80-1104		62.7	47.1	66	2	10.3	61.5	75	2	2	MI			MJ		
80-1248		63.0	49.3	71	1	10.4	61.0	80	3	2	MI			MJ		
80-1253		61.6	45.5	63	2	10.4	62.0	75	3	1	MJ			MJ		
81-1530		61.6	50.0	83	1	10.2	62.5	55	2	1	MJ			MJ		MJ

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	65.4	40.7	1	11.5	59.0	80
MINOR FAULTING VALUES	63.2	38.6	6	12.5	56.0	70
MAJOR FAULTING VALUES	62.3	35.6	11	11.5	55.0	65

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

WHEAT FERTILIZER DRILLSTRIPS

LAB # 1402 - 1418

TABLE 23

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
MODOC	S	64.8	39.5	31	2	12.4	59.5	80	4	3				MI		
73-19		62.9	40.0	35	3	11.3	59.5	75	3	2				MJ		
73-91		62.7	42.2	63	1	9.5	69.0	30	5	1				MJ		MJ
73-451		63.8	44.6	61	2	11.5	60.5	60	7	1				MJ		MJ
73-457		60.6	42.0	30	4	12.1	59.5	70	4	1	MJ			MI		MI
73-506		64.5	45.5	57	1	11.0	59.0	75	2	2				MJ		
74-30		62.6	47.4	70	2	12.4	61.0	85	3	3				MI		
75-409		62.2	38.6	27	5	12.1	58.5	85	3	3	MI			MI		
75-409 (2)		63.2	48.8	66	1	11.4	59.0	80	3	2				MJ		
80-1057		62.1	46.9	61	1	11.9	58.0	75	3	3	MI			MI		
80-1102		62.4	40.8	50	2	11.6	56.0	75	3	2	MI			MI	MI	
80-1104		61.9	42.6	50	2	11.3	60.5	80	3	2	MI			MJ		
80-1248		61.8	46.5	59	1	11.4	60.0	80	3	2	MI			MJ		
80-1253		59.2	39.5	35	4	12.1	57.0	80	3	2	MJ			MI		
81-1530		60.0	42.9	62	2	12.2	60.5	65	3	1	MJ			MI		MJ

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	64.8	39.5	2	12.4	59.5	80
MINOR FAULTING VALUES	62.6	37.4	7	12.5	56.5	70
MAJOR FAULTING VALUES	61.7	34.4	12	11.5	55.5	65

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE

QUALITY DATA OF DURUM SAMPLES 1984 CROP

STATE=CALIFORNIA STATION=TULELAKE NURSERY=PRELIMINARY

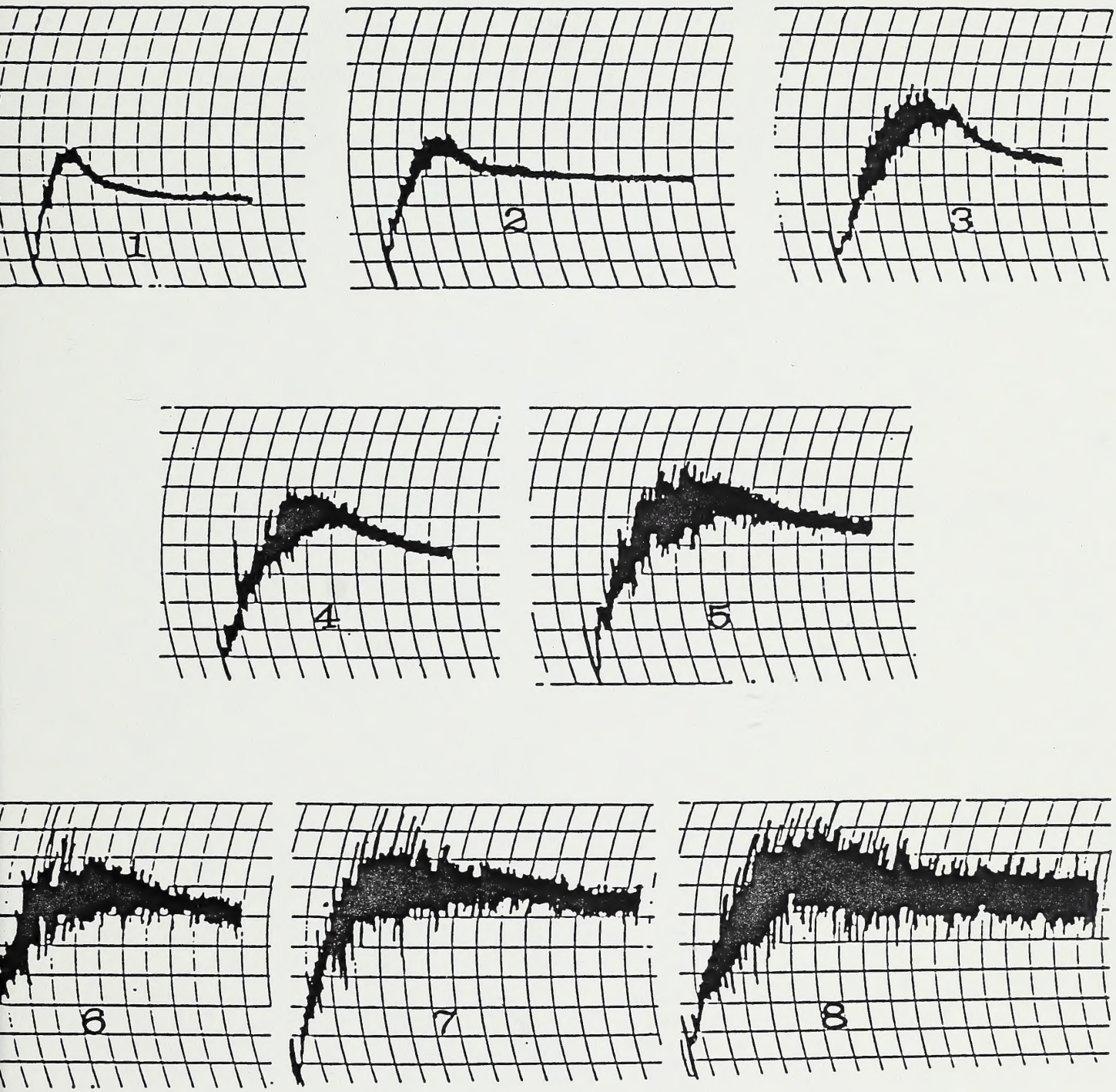
#127 YIELD

TABLE 24

VARIETY	STD	TEST WT	1000 K.WT	% LG	% SM	WHT PRO	SEMO EXTR	DUST COLOR	MIXO SCR	SCORE ***	DEFICIENCIES TW	KW	SM	WP	SX	DU
MODOC	S	65.0	39.5	39	2	12.4	57.5	80	4	3		MI		MI		
TL-73-25		62.0	39.5	45	3	12.0	59.0	75	3	3	MI	MI		MI		
TL-73-91		61.8	40.7	38	3	11.4	58.0	70	4	1	MJ			MJ		
TL-75-393		63.7	44.8	64	1	11.5	61.5	70	3	2				MJ		
TL-75-409		61.4	35.5	24	5	11.4	58.5	75	4	1	MJ	MJ		MJ		
TL-75-409 (2)		61.6	46.1	57	2	12.0	59.0	80	4	2	MJ			MI		
TL-75-409 (3)		60.8	36.8	32	4	12.1	58.5	80	4	1	MJ	MJ		MI		
TL-80-1405		63.0	48.1	69	3	12.2	48.6	70	3	1				MI	MJ	
TL-80-1057		62.1	46.9	75	1	11.4	57.5	70	3	2	MI			MJ		
TL-80-1065		62.4	45.8	66	2	11.8	64.0	70	3	3	MI			MI		
TL-80-1097		60.8	39.1	43	2	11.1	60.0	75	3	1	MJ	MI		MJ		
TL-80-1102		61.4	38.9	51	2	11.5	56.5	70	3	1	MJ	MI		MJ		
TL-80-1103		60.8	40.0	39	3	11.8	59.5	75	4	2	MJ			MI		
TL-80-1107		59.8	37.0	28	3	11.8	58.0	75	3	2	MJ	MI		MI		
TL-80-1253		60.6	42.4	54	2	11.3	62.0	75	3	1	MJ			MJ		
TL-81-1503		62.9	39.5	33	3	12.4	59.5	70	3	3		MI		MI		
TL-81-1515		62.9	42.4	54	2	12.2	59.5	75	3	3				MI		
TL-81-1527		61.3	49.0	75	1	11.8	61.0	65	3	1	MJ			MI		MI
TL-81-1530		61.1	46.9	67	2	11.5	60.5	65	3	1	MJ			MJ		MI
TL-81-1532		62.1	44.2	49	2	11.4	58.0	75	3	2	MI			MJ		
TL-82-4		60.5	38.0	41	3	10.9	62.5	70	3	1	MJ	MI		MJ		
TL-82-5		59.7	36.6	31	6	12.0	55.5	75	3	1	MJ	MJ		MI		
TL-82-43		61.3	40.7	51	2	11.3	62.0	65	3	1	MJ			MJ		MI
TL-82-44		60.3	42.6	45	4	11.9	60.0	70	3	2	MJ			MI		
TL-82-48		62.6	39.7	25	4	11.7	57.5	80	3	3	MI	MI		MI		
TL-82-49		61.4	39.7	25	3	11.6	56.5	70	3	2	MJ	MI		MI		
TL-82-50		62.7	37.9	19	3	11.4	56.5	70	3	2	MI	MI		MJ		
TL-82-56		60.6	38.3	16	6	11.7	56.0	75	3	2	MJ	MI		MI		
TL-82-57		62.4	44.2	35	2	12.1	54.5	70	3	3	MI			MI		
TL-82-58		60.2	36.9	16	4	12.0	57.0	75	3	2	MJ	MI		MI		
TL-82-61		62.4	38.0	23	3	11.5	56.5	65	3	1	MI	MI		MJ		MI
TL-82-71		61.0	40.2	25	4	11.2	57.5	75	3	1	MJ			MJ		
TL-82-72		60.8	39.2	26	4	11.7	57.0	80	3	2	MJ	MI		MI		
TL-82-74		62.2	42.9	46	2	12.0	57.0	75	3	3	MI			MI		
TL-82-100		61.8	39.4	43	2	12.0	57.5	80	4	2	MJ	MI		MI		
TL-82-102		62.7	38.6	44	2	11.6	56.5	70	3	3	MI	MI		MI		
TL-82-103		62.2	40.5	42	2	11.8	57.0	80	4	3	MI			MI		
TL-82-111		63.8	42.7	57	2	11.3	59.0	75	2	2				MJ		
TL-82-112		63.4	45.0	57	1	11.7	56.0	75	1	3				MI		
TL-82-113		63.5	39.1	33	2	11.8	55.0	75	2	3		MI		MI		
TL-82-120		62.7	45.8	54	2	12.1	57.0	75	3	3	MI			MI		
TL-82-123		64.0	38.0	9	4	12.0	57.0	85	2	3		MI		MI		
TL-75-409 (4)		63.4	46.1	59	1	11.4	56.5	75	3	2				MJ		
MODOC	S	65.0	44.4	68	1	12.4	56.5	75	4	3				MI		

DEFICIENCIES	TW	KW	SM	WP	SX	DU
AVG OF STANDARDS	65.0	41.9	2	12.4	57.0	78
MINOR FAULTING VALUES	62.8	39.8	7	12.5	54.0	68
MAJOR FAULTING VALUES	61.9	36.8	12	11.5	53.0	63

**EVALUATION 1=NO PROMISE, 2=LITTLE PROMISE, 3=SOME PROMISE, 4=GOOD PROMISE



REFERENCE MIXOGRAMS

DURUM WHEAT